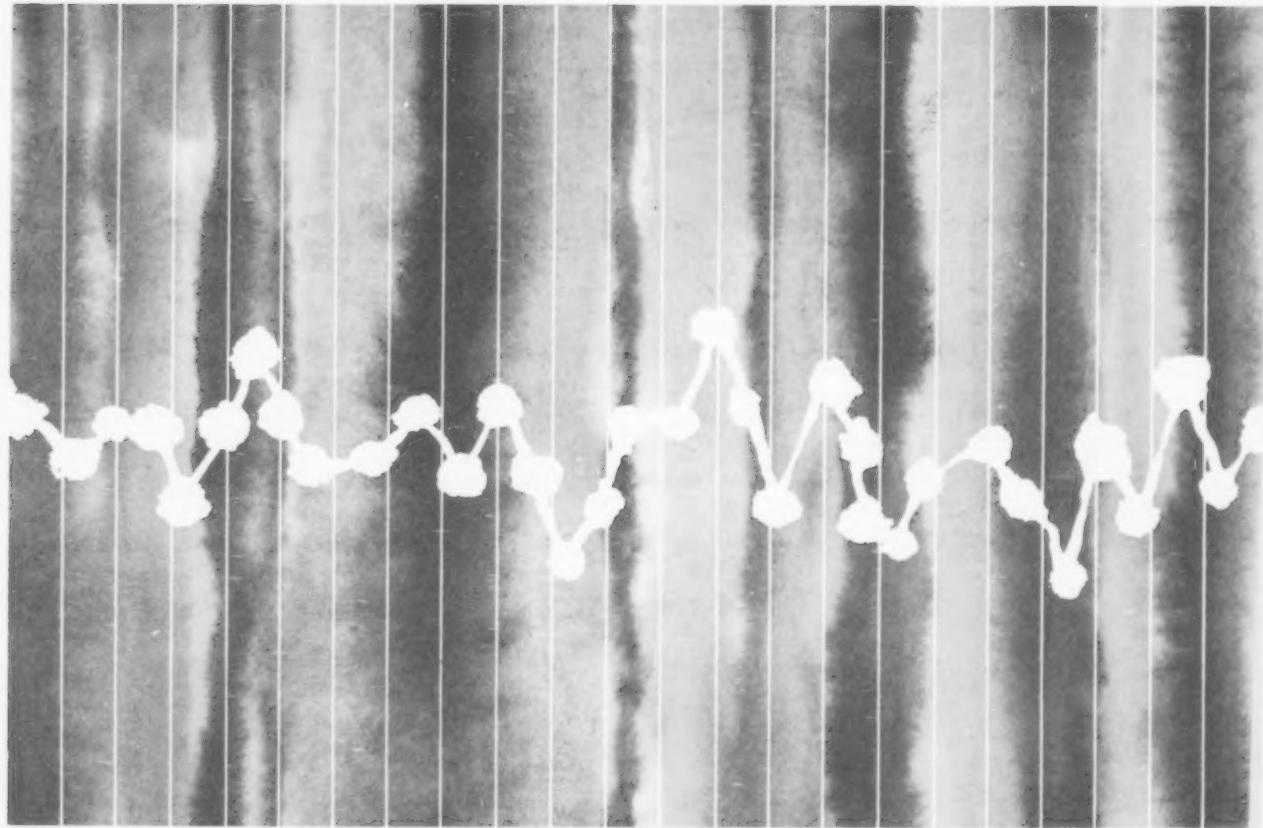


defense indicators

SEPTEMBER 1975



U.S. DEPARTMENT OF COMMERCE • BUREAU OF ECONOMIC ANALYSIS



This report was prepared in the Statistical Indicators Division, Bureau of Economic Analysis. Technical staff and their responsibilities for the publication are—

Barry A. Beckman—Technical supervision and review,

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defense indicators

September 1975
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6 BEA PROJECTS

for economic
analysis

BUSINESS CONDITIONS DIGEST A monthly report for analyzing economic fluctuations over a short span of years.

This report brings together approximately 600 economic time series in a form convenient for analysts whether their approach to the study of current business conditions and prospects is the national income model, the leading indicators, anticipations and intentions, or a combination of these. Other types of data such as foreign trade, Federal Government activities, and international series are included to facilitate a more complete analysis.

Data are presented in charts and tables. Appendixes provide historical data, series descriptions, seasonal adjustment factors, and measures of variability. A computer tape containing data for most of the series is available for purchase.

DEFENSE INDICATORS A monthly report for analyzing the current and prospective impact of defense activity on the national economy.

This report brings together the principal time series on defense activities which influence short-term changes in the national economy. These include series on obligations, contracts, orders, shipments, inventories, expenditures, employment, and earnings. The approximately 60 time series included are grouped in accordance with the time at which the activities they measure occur in the defense order-production-delivery process. Charts and analytical tables facilitate interpretation.

LONG TERM ECONOMIC GROWTH A report for the study of economic trends over a long span of years, 1860-1970.

This report has been developed from available statistics to provide a comprehensive, long-range view of the U.S. economy. It is a basic research document for economists, historians, investors, teachers, and students. It brings together under one cover, in meaningful and convenient form, the complete statistical basis for a study of long-term economic trends. A computer tape file of the time series included in the report is available for purchase.

COMPUTER PROGRAMS FOR TIME SERIES ANALYSIS The source statements for FORTRAN IV programs used by BEA in its analysis of time series are available on a single computer tape.

SEASONAL ADJUSTMENT PROGRAMS.—Two variants of the Census computer program for measuring and analyzing seasonal, trading-day, cyclical, and irregular fluctuations. They are particularly useful in analyzing economic fluctuations which take place within a year. The X-11 variant is used for adjusting monthly data and the X-11Q for quarterly data. These programs make additive as well as multiplicative adjustments and compute many summary and analytical measures.

DIFFUSION INDEX PROGRAM.—A computer program for computing diffusion indexes, cumulated diffusion indexes, and summary measures of the properties of each index.

SURVEY OF CURRENT BUSINESS A monthly report for analyzing current economic developments.

This report provides a useful combination of current data for more than 2,500 statistical series and significant articles analyzing economic developments. These data and analyses include such areas as the national income and product accounts, the balance of payments accounts, plant and equipment expenditures, regional personal income, and the input-output accounts.

BUSINESS STATISTICS A biennial reference volume containing statistical series reported currently in the Survey of Current Business.

This report provides historical data back to 1947 for nearly 2,500 time series. The series are accompanied by concise descriptions as to their composition, methods of compilation, comparability, revisions, and availability. Also listed are the names and addresses of organizations which provide the basic data for the series.

Introduction

The purpose of this monthly report is to bring together the principal time series on defense activity which influence short-term changes in the national economy. These include series on obligations, contracts, orders, shipments, inventories, expenditures, employment, and earnings. Most are monthly but a few quarterly series are included. The series numbers used are for identification purposes only and do not reflect relationships or order.

Classification of Series

Chart 1 compares Government purchases of goods and services for national defense with total gross national product. GNP is the market value of the final output of goods and services produced by the Nation's economy and represents a very broad measure of aggregate economic activity. In addition to national defense purchases, it includes Federal Government purchases of goods and services for nondefense purposes, State and local government purchases, personal consumption expenditures, gross private domestic investment, and net exports of goods and services. Chart 1 also presents national defense purchases as a percent of gross national product and, for both series, changes from the previous quarter.

A related group of series is shown in Chart 4, "Defense-Related Balance of Payments Components." These series show the effects of defense-related economic activity on the balance of payments accounts.

The remaining series are grouped in accordance with the time at which the activities they measure occur within the defense order-production-delivery process. Those series measuring activities that usually precede production, such as new orders placed with defense products industries and contract awards, are presented in Chart 2, "Advance Indicators of Defense Activity." Chart 3, "Intermediate and Final Indicators of Defense Activity," presents series that measure activities which tend to move at the same time as production (such as employment) and activities which usually follow production (such as shipments).

Series Included

Following is a list of the series as they appear in charts 1, 2, 3, and 4 (the source agencies are abbreviated in parentheses; detailed lists of sources for charts 1, 2, and 3 appeared as appendixes to the August and October 1968 issues of this report).

Gross National Product and National Defense Purchases

Gross national product (BEA)

Federal Government purchases of goods and services, national defense (BEA)

National defense purchases as a percent of gross national product (BEA)

Gross national product, changes from previous quarter (BEA)

National defense purchases, changes from previous quarter (BEA)

Advance Indicators of Defense Activity

Defense Department gross obligations incurred, total (DOD)

Defense Department gross obligations incurred, procurement (DOD)

Gross obligations incurred outside the Government for national defense (Treasury)

Defense Department military prime contract awards for work performed in the United States (DOD)

Defense Department gross unpaid obligations outstanding (DOD)

Manufacturers' new orders (Census):

Defense products industries

Defense products

Manufacturers' new orders from the U.S. Government, aerospace industries (Census):

Average weekly overtime hours, production workers, defense products industries (BLS)

Accessions, defense products industries (BLS)

Layoffs, defense products industries (BLS)

Intermediate and Final Indicators of Defense Activity

Manufacturers' inventories (Census):

Defense products industries

Defense products

Manufacturers' unfilled orders (Census):

Defense products industries

Defense products

Manufacturers' unfilled orders from the U.S. Government, aerospace industries (Census)

Defense Department progress payments outstanding (DOD)

Employment in defense products industries, total (BLS)

Employment in defense products industries, production workers (BLS)

Index of aggregate weekly man-hours, defense products industries (BLS)

Index of aggregate weekly payrolls, production workers, defense products industries (BLS)

Defense Department manpower, military (DOD)

Defense Department manpower, civilian (DOD)

Defense Department net outlays, total, military functions and military assistance (DOD)

Defense Department net outlays, procurement (DOD)

Budget outlays for the national defense function (Treasury)

Defense Department personnel compensation (DOD)

Manufacturers' shipments (Census):

Defense products industries

Defense products

Manufacturers' shipments to the U.S. Government, aerospace industries (Census):

Ratio, manufacturers' unfilled orders to shipments (Census):

Defense products industries

Defense products

Ratio, manufacturers' inventories to shipments (Census):

Defense products industries

Defense products

Defense-Related Balance of Payments Components

Transfers under U.S. military agency sales contracts—exports (BEA)

Direct defense expenditures—imports (BEA)

U.S. Government cash receipts associated with military sales contracts (BEA)

Some additional data are included in the tables though not presented in the charts. These include Defense Department military prime contract awards by procurement category (e.g., for aircraft, missiles and space systems, ships, weapons, and ammunitions), the operations component of Defense Department

gross obligations incurred, gross unpaid obligations outstanding, and net outlays and the procurement component of gross unpaid obligations outstanding.

Description of Basic Data

The Department of Defense compiles statistics on obligations, contract awards, personnel compensation, and outlays. The DOD obligations and outlays data are based on the Defense Department's monthly *Status of Funds* report which is developed from accounting data and is designed to provide information on the total status of Defense Department financing. Accounts included in this report are aggregated by appropriation categories including personnel costs, operations and maintenance, procurement, research and development, and construction. The *Status of Funds* report duplicates some obligations. That is, obligations of one government unit to another unit are not netted out.

The Defense Department's *Contract Awards* report covers the awarding of procurement contracts. These include obligations for operating and maintenance supplies, equipment and services, research and development, and construction in addition to the obligations for items that constitute the fiscal "procurement" category. The statistics are aggregated by commodity categories including aircraft, missile and space systems, ships, weapons, ammunition, electronics and communication equipment, fuels, and textiles and clothing. The *Contract Awards* report includes procurement for NASA, other nondefense agencies, and the Foreign Military Sales Program which are not included in the *Status of Funds* report.

The Census quarterly new orders, unfilled orders and shipments series for "aerospace industries" are based on reports of companies classified into the following industry categories:

Industry	SIC Code
Aircraft and parts	372
Guided missiles and space vehicles, completely assembled ..	1925

The Census and BLS data for "defense products industries" presented in this report cover companies and establishments¹ classified into the following industry categories in accordance with the *Standard Industrial Classification Manual*, 1967 edition, Executive Office of the President, Bureau of the Budget:

Industry	SIC Code
Ordnance and accessories	19
Communication equipment	366
Aircraft and parts	372

Establishments reporting to the BLS are classified into industries on the basis of their principal product or activity as determined from information on annual sales volume, which is collected each year on a supplement to the monthly report. The entire employment of an establishment making more than one product or engaging in more than one activity is included under the industry accounting for the largest percentage of the annual sales of that establishment.

The Census Bureau's monthly survey is based primarily on reports at the company level and the monthly estimates are benchmarked to the establishment data from the *Annual Survey*

of Manufactures. Also, many of the large diversified companies file separate divisional reports monthly. Although the reports in the survey are also classified according to their principal product or activity, this difference in the organizational level from which reports are received results in firms being classified into different industries in the BLS and Census surveys and, consequently, limits somewhat the comparability of the data collected by these agencies. However, as we know from past studies in this area, some differences in industrial classification between BLS and Census data would remain even if reports came from the same organizational levels.

Both the Census and the BLS data include a significant amount of nondefense activities carried on by companies and establishments classified in the above industries. For example, the data cover the production of commercial as well as military aircraft. On the other hand, they exclude significant amounts of defense work carried on by companies and establishments classified in industries other than those listed above (e.g., the manufacture of military uniforms and the shipbuilding industry).²

Census data for "defense products" are based on separate reports on defense work filed by large defense contractors in the ordnance, communications, complete aircraft, aircraft parts, and shipbuilding industries. Thus, they differ from the "defense products industries" data in that they include defense activity in the shipbuilding industry and exclude nondefense work in the other industries covered. Defense products data cover work for the Department of Defense and exclude contracts for the National Aeronautics and Space Administration and the Atomic Energy Commission.

The DOD data are not strictly comparable in coverage with either the BLS or the Census data since the Defense Department figures (1) cover products of industries not included in the defense products category; (2) generally do not include non-defense activities (except that some series, such as contract awards, include activities by the Department of Defense on behalf of nondefense agencies); and (3) do not cover intermediate activities such as those related to subcontracting and supplying of parts. Thus, the Census Bureau data for manufacturers' new orders and shipments of defense products industries, for example, differ in coverage from the DOD contract awards and net outlays series.

The Department of Defense data are not comparable with Federal Government purchases of goods and services for national defense or the Treasury Department obligations and outlays data since the BEA and Treasury data cover defense-related activities of other agencies such as the Atomic Energy Commission, the Selective Service System, and the Office of Emergency Planning.

Projects to improve the comparability of the data collected by the Bureau of the Census, the Bureau of Labor Statistics, and the Department of Defense and to improve the separation of defense and nondefense activity for the Census and BLS data are being undertaken by the statistical agencies under the leadership of the Interagency Committee mentioned earlier in this report.

¹An establishment is a single physical location where business is conducted (e.g. a plant). A company often includes more than one establishment.

²See the Bureau of the Census publication *Shipments of Defense-Oriented Industries*, Current Industrial Reports, Series MA-175, for annual estimates of shipments by industry to the Department of Defense, the National Aeronautics and Space Administration, and the Atomic Energy Commission. Included also are industries not covered by the "defense products industries" category.

Variability of Data

Seasonal variations dominate the movements of many time series, and adjustments for average seasonal fluctuations are often necessary to bring out the underlying trends of the series. These seasonal adjustments allow for the effects of repetitive intrayear variations resulting primarily from normal differences in weather conditions and from various institutional arrangements. An additional adjustment is sometimes necessary for series which contain considerable variation resulting from the number of working or trading days in each month. As used in this report, the term "seasonal adjustment" includes trading-day adjustments where they have been made.

Most of the series in this report are shown in seasonally adjusted form. For Defense Department and BLS series, unadjusted data are also shown since they are not readily available elsewhere. Current seasonal adjustment factors are shown in appendix A.

The effect of seasonal adjustment in reducing the month-to-month variation in the data can be seen in appendix B. There, the first two columns show the average month-to-month percent change (without regard to sign) in the data before and after seasonal adjustment. Some series still show very irregular month-to-month movements after adjustment for seasonal variation. The measures in appendix B also indicate the month-to-month variation in the irregular and short-term trend components of the series. For many series, irregular movements tend to dominate 1- or 2-month comparisons, and the underlying short-term trend becomes dominant in comparisons over longer spans. The "months for cyclical dominance" (MCD) measure estimates the span of months required for the short-term trend to dominate the irregular component. Series with an MCD of 4 or more are supplemented with a moving average (with the

number of terms equal to MCD) in the charts. Data for these moving averages are listed in the basic data tables.

Guide to Charts and Tables

Most series are plotted on a standard ratio scale so that equal percent changes cover the same vertical distance. For these series, an increase of 100 percent covers approximately 1 inch. Arithmetic scales are used for series with zero or negative data, series which could approach zero (e.g., average overtime hours and layoff rate), and series expressed in percent.

In general, monthly data are plotted with a solid line and quarterly data are represented by a solid line with quarterly plot points. Quarterly series are also identified with a "Q" after their titles. For series which include a moving average, a dashed line is used for the actual monthly data and a solid line for the moving average. (The moving average values are centered within the span of months they are computed from.) Exceptions to this scheme may be necessary for special situations. Data apply to the whole period except for series designated "EOM" (end of month) or "EOQ" (end of quarter). The number in the box at the right of each series indicates the latest month (Arabic) or quarter (Roman) plotted. Parallel lines across a series indicate a break in continuity (e.g., data not available or change in series definition).

Tables 1, 2, 3, and 4 present current data for the series shown in the charts, including the moving averages. They also include unadjusted data for some series and data for related series which are not plotted. Table A summarizes the most recent data and percent changes for many of the series in the report. Historical data are shown on an intermittent basis in appendix C. (The index indicates the appropriate issue for each series.)

The October issue of DEFENSE INDICATORS is scheduled
for release on October 30.

Table A. Summary of Recent Data and Current Percent Changes for Principal Defense Indicators

(Preliminary and revised figures are not identified here but the user may consult tables 1, 2, 3, and 4 where such identification is given)

Series title	Unit of measure	Basic data								Percent change				Series number
		Average		4th Q 1974	1st Q 1975	2d Q 1975	June 1975	July 1975	Aug. 1975	June '75 to July '75	July '75 to Aug. '75	4th Q '74 to 1st Q '75	1st Q '75 to 2d Q '75	
		1973	1974											
GROSS NATIONAL PRODUCT AND NATIONAL DEFENSE PURCHASES														
200. Gross national product (BEA)	Ann. rate, bil. dol.	1294.9	1397.4	1430.9	1416.6	1440.9	...	...	...	...	...	-1.0	1.7	200
264. Federal Government purchases of goods and services, national defense (BEA)	do	74.4	78.7	84.0	84.7	84.8	...	...	...	...	...	0.8	0.1	264
613. National defense purchases as a percent of GNP (BEA) ¹	Percent	5.7	5.6	5.9	6.0	5.9	...	...	...	...	...	0.1	-0.1	613
ADVANCE INDICATORS OF DEFENSE ACTIVITY														
Defense Dept. gross obligations incurred (DOD):	Ann. rate, bil. dol.													
617. Total	85.5	93.9	96.0	93.9	98.9	103.0	NA	NA	NA	NA	NA	-2.2	5.3	617
621. Procurement	do	18.8	20.6	20.9	21.1	19.7	19.7	NA	NA	NA	NA	1.0	-6.6	621
623. Gross obligations incurred outside the Federal Government for national defense (Treasury)	do	89.1	101.1	102.4	99.7	NA	NA	NA	NA	NA	NA	-2.6	NA	623
625. Defense Department military prime contract awards for work performed in the U.S. (DOD)	do	35.3	41.4	41.9	42.0	47.3	45.3	NA	NA	NA	NA	0.2	12.6	625
643. Defense Department gross unpaid obligations outstanding (DOD)	Bil. dol., end of period	36.8	40.0	40.0	39.8	41.3	41.3	NA	NA	NA	NA	-0.5	3.8	643
648. Mfrs.' new orders, defense products (Census)	Ann. rate, bil. dol.	20.5	22.8	21.7	21.9	20.8	22.9	21.8	23.1	-4.8	6.0	0.9	-5.0	648
650. Manufacturers' new orders from the U.S. Government, aerospace industries (Census)	do	15.9	19.1	22.5	17.0	NA	...	...	...	...	...	-24.4	NA	650
653. Average weekly overtime hours, production workers, defense products industries (BLS) ¹	Hours	3.1	2.8	2.6	2.4	2.4	2.5	2.5	NA	0.0	NA	-0.2	0.0	653
654. Accesions, defense products industries (BLS) ¹	Number per 100 employees	2.2	2.1	1.7	1.5	1.5	1.0	NA	NA	NA	NA	-0.2	0.0	654
655. Layoffs, defense products industries (BLS) ¹	do	0.6	0.6	0.7	1.4	1.4	NA	NA	NA	NA	NA	0.7	0.0	655
INTERMEDIATE AND FINAL INDICATORS OF DEFENSE ACTIVITY														
657. Output of defense and space equipment (FRB)	1967=100	80.4	82.4	83.7	82.8	82.7	82.9	82.6	81.9	-0.4	-0.6	-1.1	-0.1	657
659. Mfrs.' inventories, defense products (Census)	Bil. dol., end of period	5.6	6.5	6.5	6.9	7.6	7.6	7.5	NA	-1.3	NA	6.2	10.1	659
661. Mfrs.' unfilled orders, defense products (Census)	do	20.7	24.6	24.6	25.0	25.1	25.1	25.4	25.6	1.2	0.8	1.6	0.4	661
664. Manufacturers' unfilled orders from the U.S. Government, aerospace industries (Census)	do	16.4	20.7	20.7	20.8	NA	...	...	...	...	...	0.5	NA	664
666. Defense Department progress payments outstanding (DOD) @	do	7.4	9.2	9.2	9.6	10.5	...	...	...	...	...	4.3	9.4	666
Employment in defense products industries (BLS):														
671. Total	Thousands	1,161	1,161	1,169	1,136	1,115	1,110	1,098	1,092	-1.1	-0.5	-2.8	-1.8	670
671. Production workers	do	616	610	615	587	570	568	561	550	-1.2	-2.0	-4.6	-2.9	671
673. Index of aggregate weekly man-hours, defense products industries (BLS)	1967=100	69.1	68.4	68.8	66.8	65.8	65.7	64.9	NA	-1.2	NA	-2.9	-1.5	673
675. Index of aggregate weekly payrolls, production workers, defense products industries (BLS)	do	91.9	96.6	100.7	98.1	99.2	100.8	99.4	NA	-1.4	NA	-2.6	1.1	675
677. Defense Department manpower (DOD) @	do													
678. Civilian	Thousands, end of period	2,202	2,140	2,140	2,137	2,128	2,128	2,128	2,111	0.0	-0.8	-0.1	-0.4	677
678. Civilian	do	1,026	1,043	1,043	1,034	1,042	1,042	1,052	NA	1.0	NA	-0.9	0.8	678
680. Total, military functions and military assistance	Ann. rate, bil. dol.	76.3	83.6	89.3	86.2	83.2	76.0	99.3	103.1	30.7	3.8	-3.5	-3.5	680
682. Procurement	do	15.7	15.5	17.8	17.2	15.3	14.6	15.2	19.6	4.1	28.9	-3.4	-11.0	682
683. Budget outlays for the national defense function (Treasury)	do	78.1	84.8	92.0	89.3	87.1	80.3	100.4	NA	25.0	NA	-2.9	-2.5	683
685. Defense Dept. personnel compensation (DOD)	do	32.4	33.5	34.6	33.7	34.2	34.4	NA	NA	NA	NA	-2.6	1.5	685
688. Mfrs.' shipments, defense products (Census)	do	18.8	18.9	19.1	20.4	20.3	20.0	18.8	20.4	-6.0	8.5	6.8	-0.5	688
691. Ratio, manufacturers' unfilled orders to shipments, defense products (Census)	Ratio	14.4	15.2	15.6	16.2	NA	...	...	...	...	...	3.8	NA	689
693. Ratio, manufacturers' inventories to shipments, defense products (Census)	do	12.7	14.5	15.3	14.6	14.8	15.1	16.2	15.1	7.3	-6.8	-4.6	1.4	691
693. Ratio, manufacturers' inventories to shipments, defense products (Census)	do	3.5	3.9	4.1	3.9	4.2	4.4	4.8	NA	9.1	NA	-4.9	7.7	693
DEFENSE-RELATED BALANCE OF PAYMENTS COMPONENTS														
548. Transfers under U.S. military agency sales contracts—exports (BEA) ¹	Ann. rate, mil. dol.	2,342	2,944	3,348	3,816	3,216	...	...	...	...	...	468	-600	546
547. Direct defense expenditures—imports (BEA) ¹ @	do	4,658	5,103	5,340	5,212	4,864	...	...	...	...	...	-128	-348	547
549. U.S. Government cash receipts associated with military sales contracts (BEA) ¹	do	2,290	2,957	3,048	4,504	4,168	...	...	...	...	...	1,456	-336	696

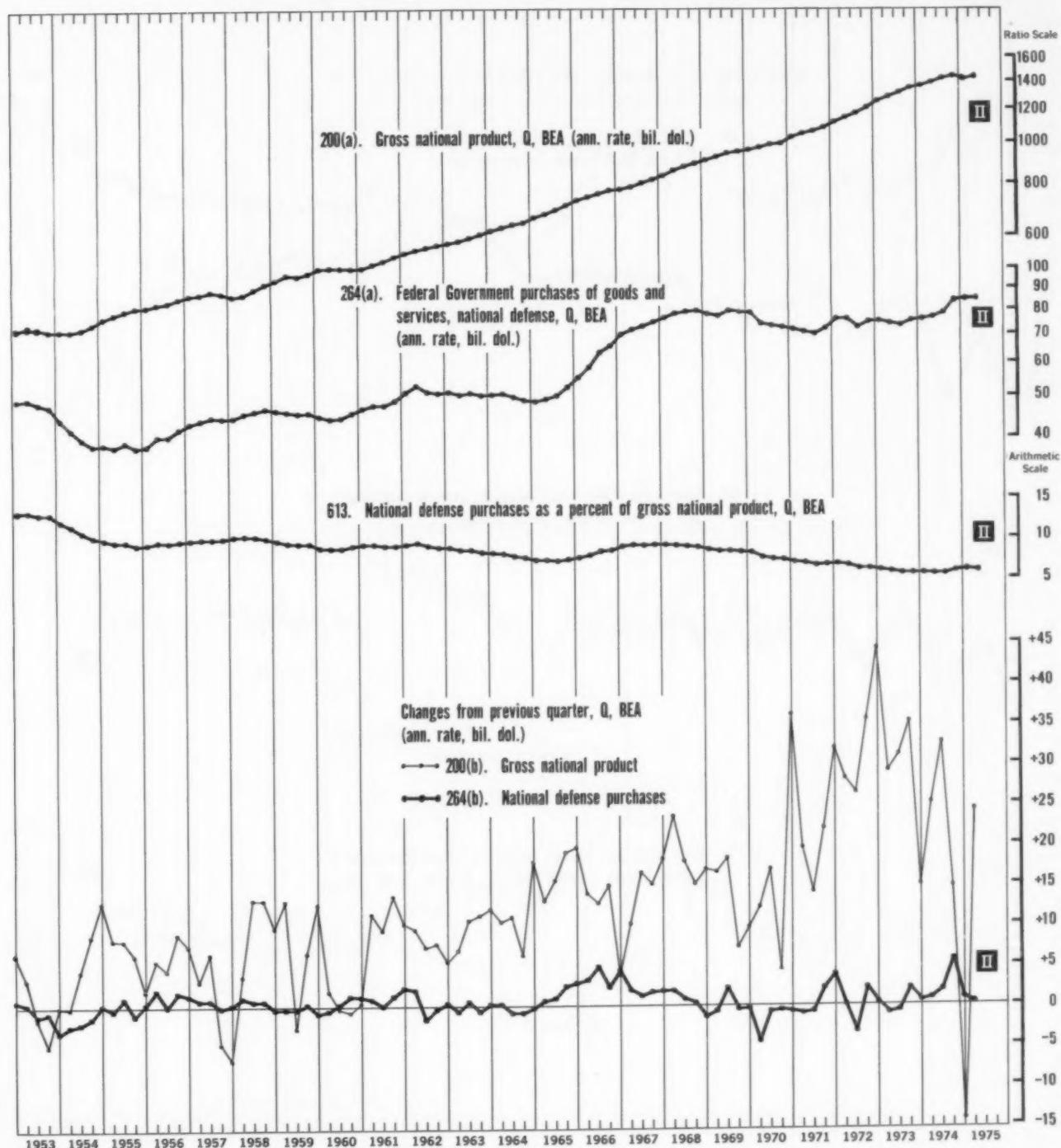
NOTE: This table is presented as a convenient summary of the current data for many of the indicators in this report. In many cases, data shown here are rounded to fewer digits or are in different units than those shown in tables 1, 2, 3, and 4. Where available, annual figures are those published by the source agencies; otherwise they (and the quarterly figures for monthly series) are averages or totals of the data as shown in the data tables. Series are seasonally adjusted except for those indicated by @, which appear to contain no seasonal movement.

NA = not available.

¹Differences rather than percent changes are shown for this series.

CHART
1

Gross National Product and National Defense Purchases



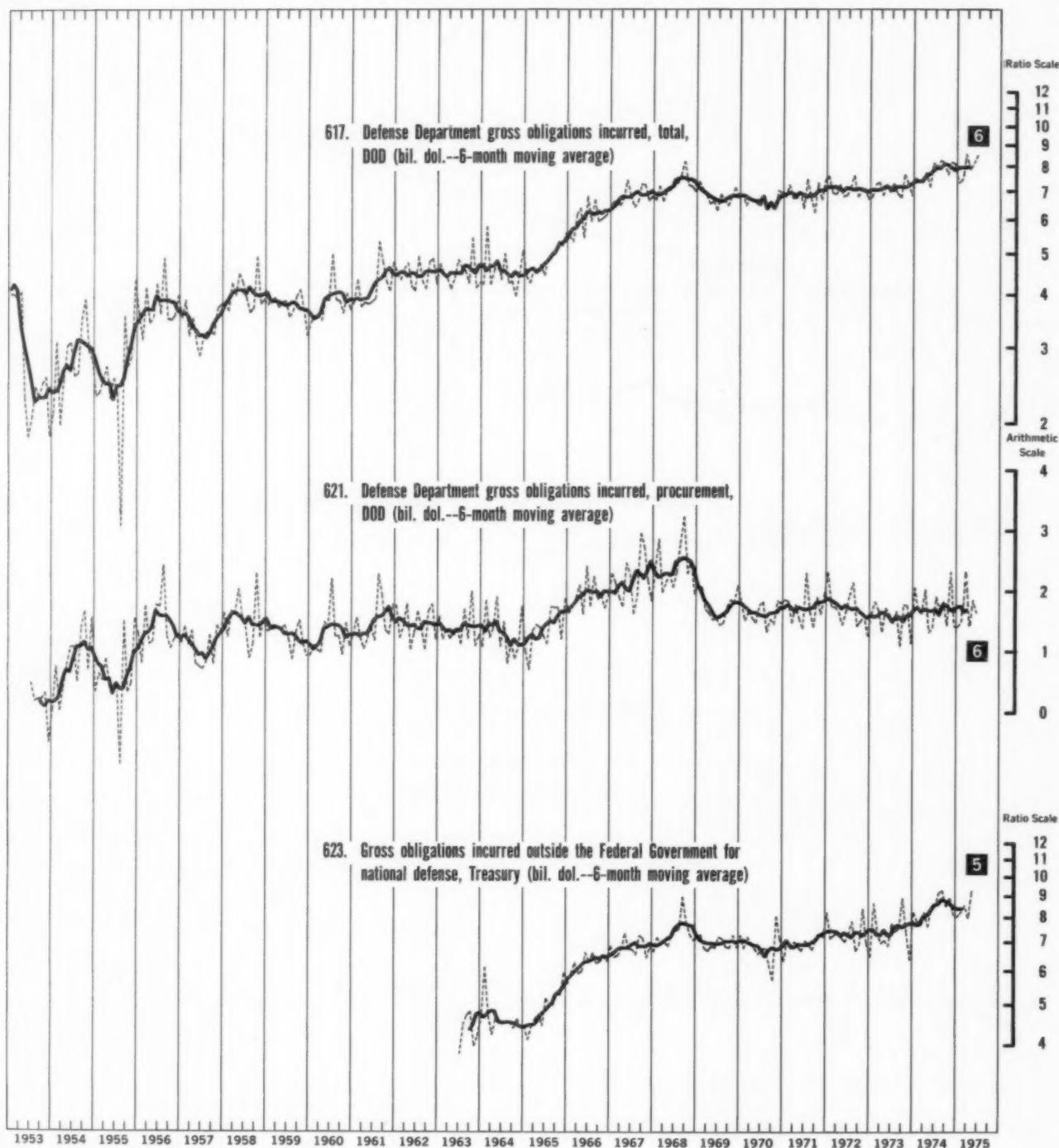
Current data for these series are shown on page 14.

defense indicators

CHART

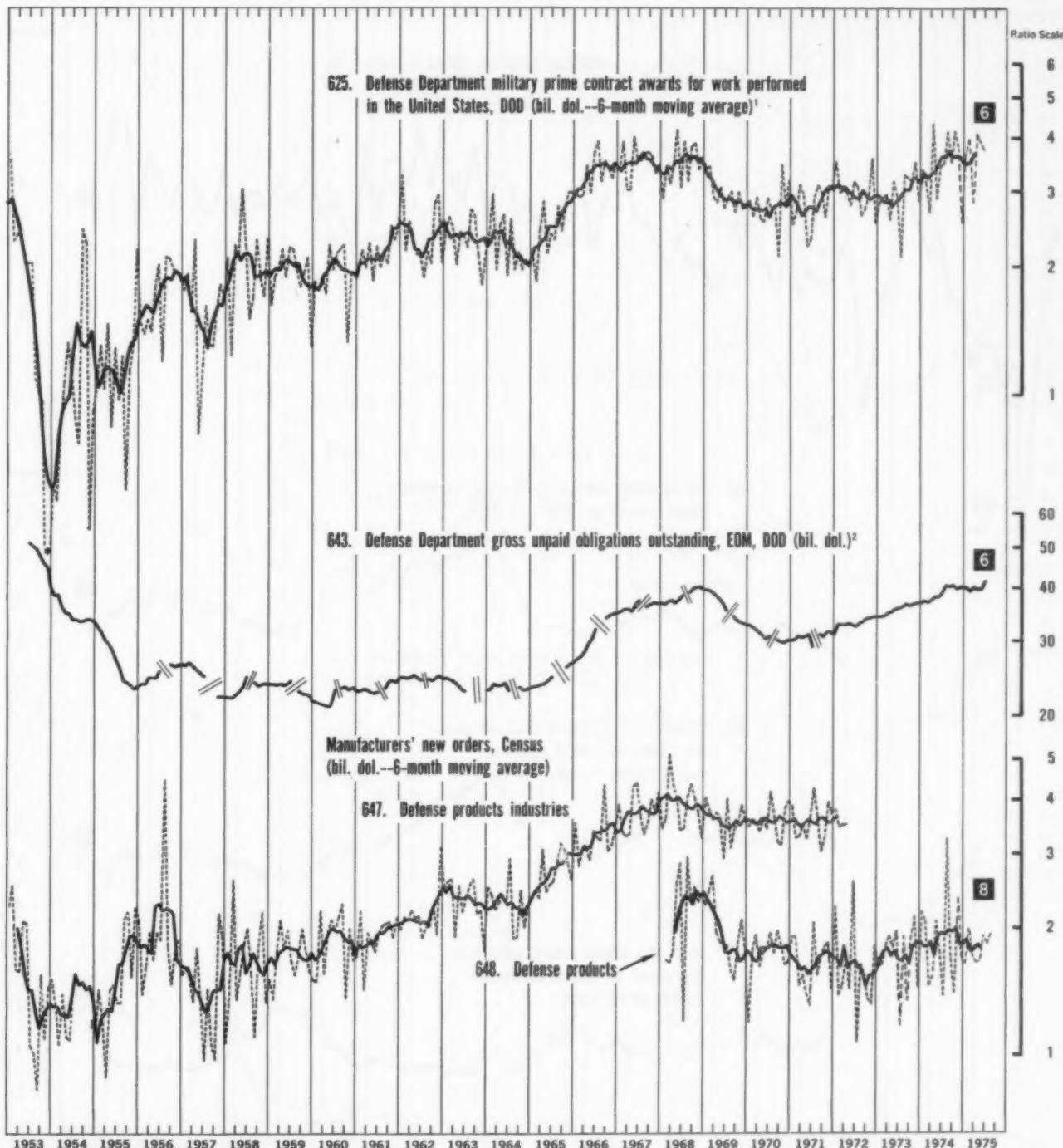
2

Advance Indicators of Defense Activity



Current data for these series are shown on pages 15 and 16.

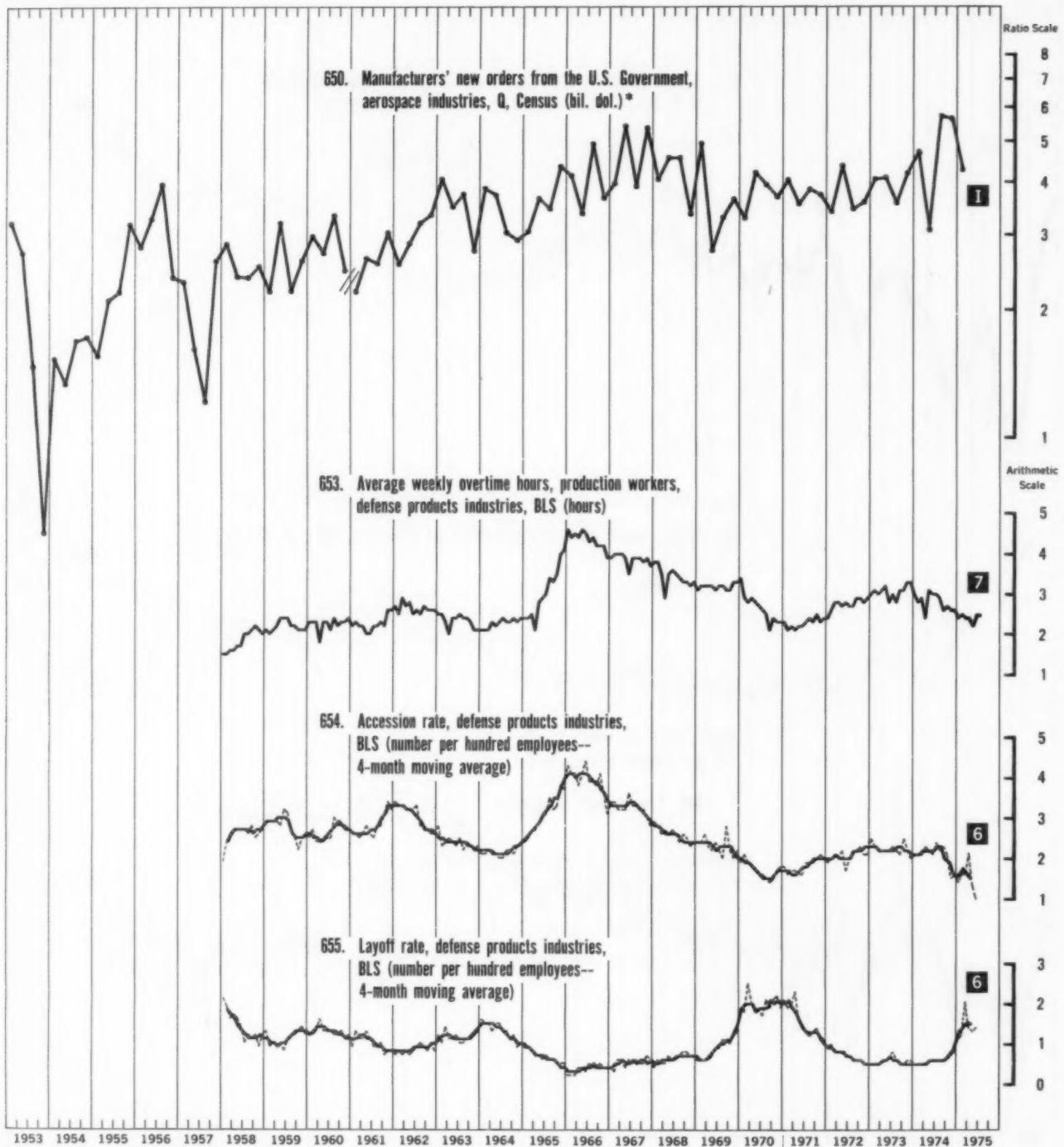
Advance Indicators of Defense Activity--Continued

¹Data prior to July 1955 exclude orders written to other Government agencies.²Data for the following months not available: July of 1956-71; August of 1956-57 and 1963-66; September of 1957, 1963, and 1965; and October and November of 1963.³Contract awards for November 1953--\$265 million; December 1953--\$390 million. Current data for these series are shown on pages 16 and 20.

defense indicators

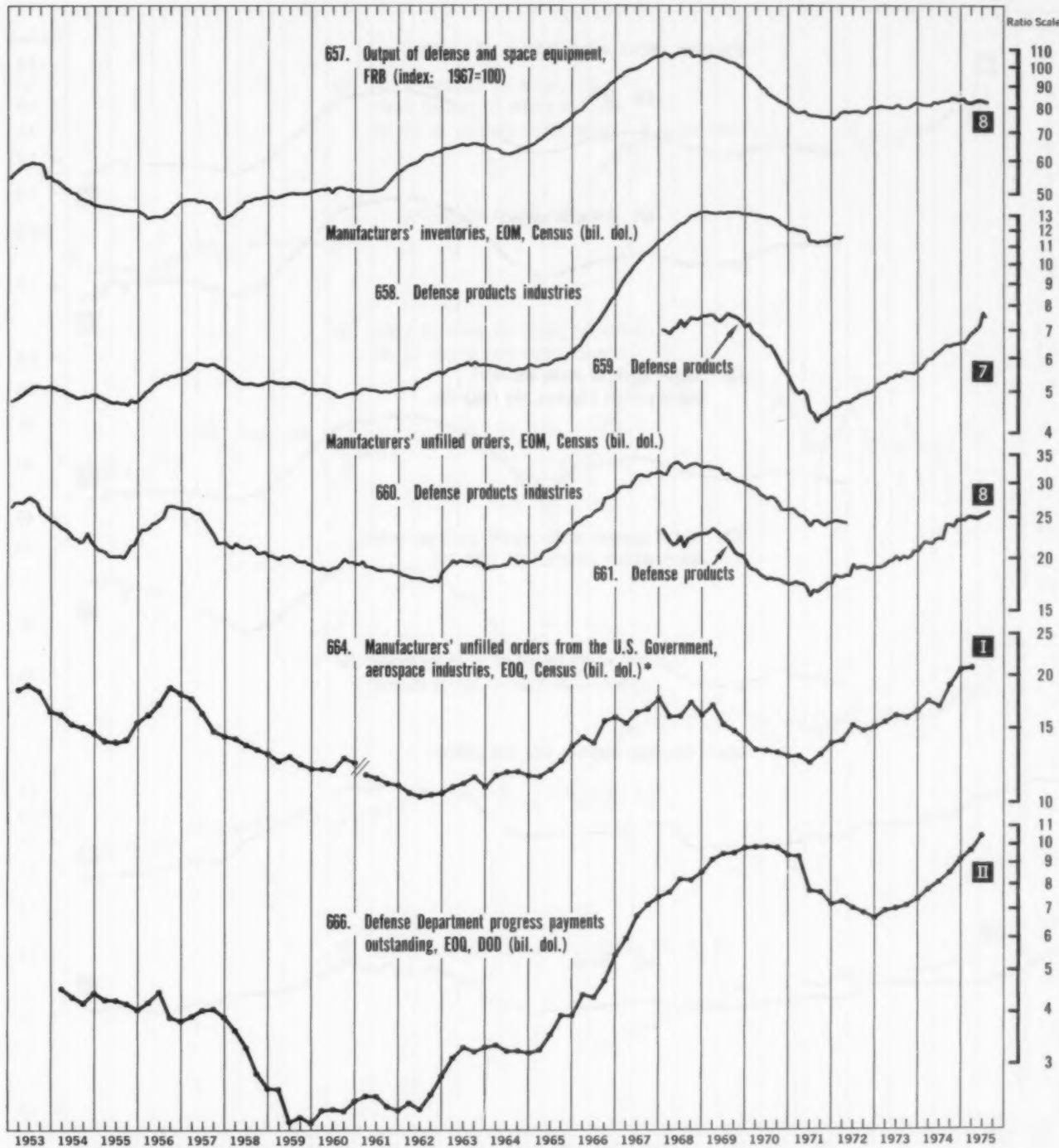
CHART
2

Advance Indicators of Defense Activity--Continued



*Data prior to 1961 include orders from non-Government customers.
Current data for these series are shown on pages 20 and 21.

Intermediate and Final Indicators of Defense Activity

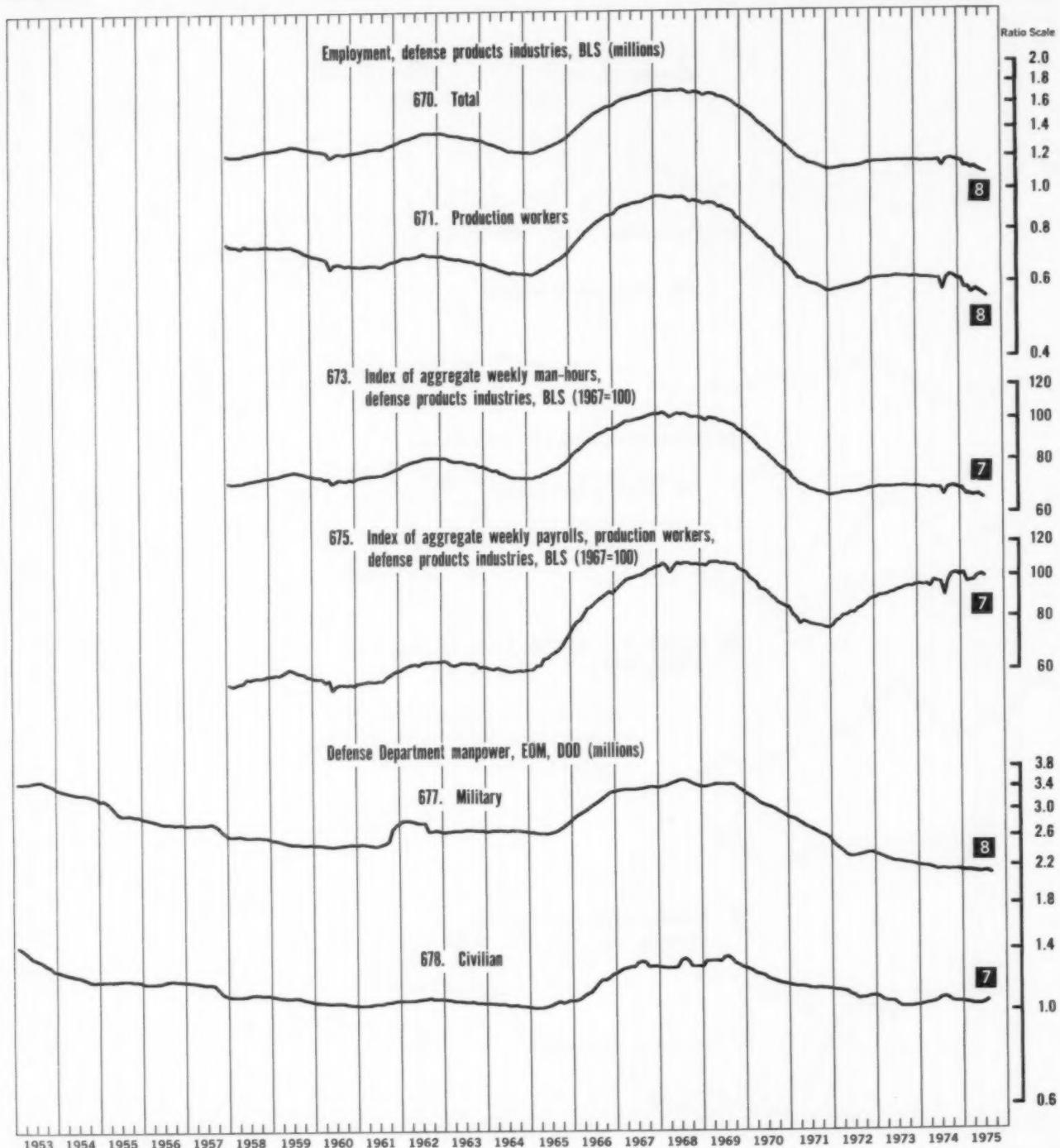


* Data prior to 1961 include orders from non-Government customers.
Current data for these series are shown on page 22.

defense indicators

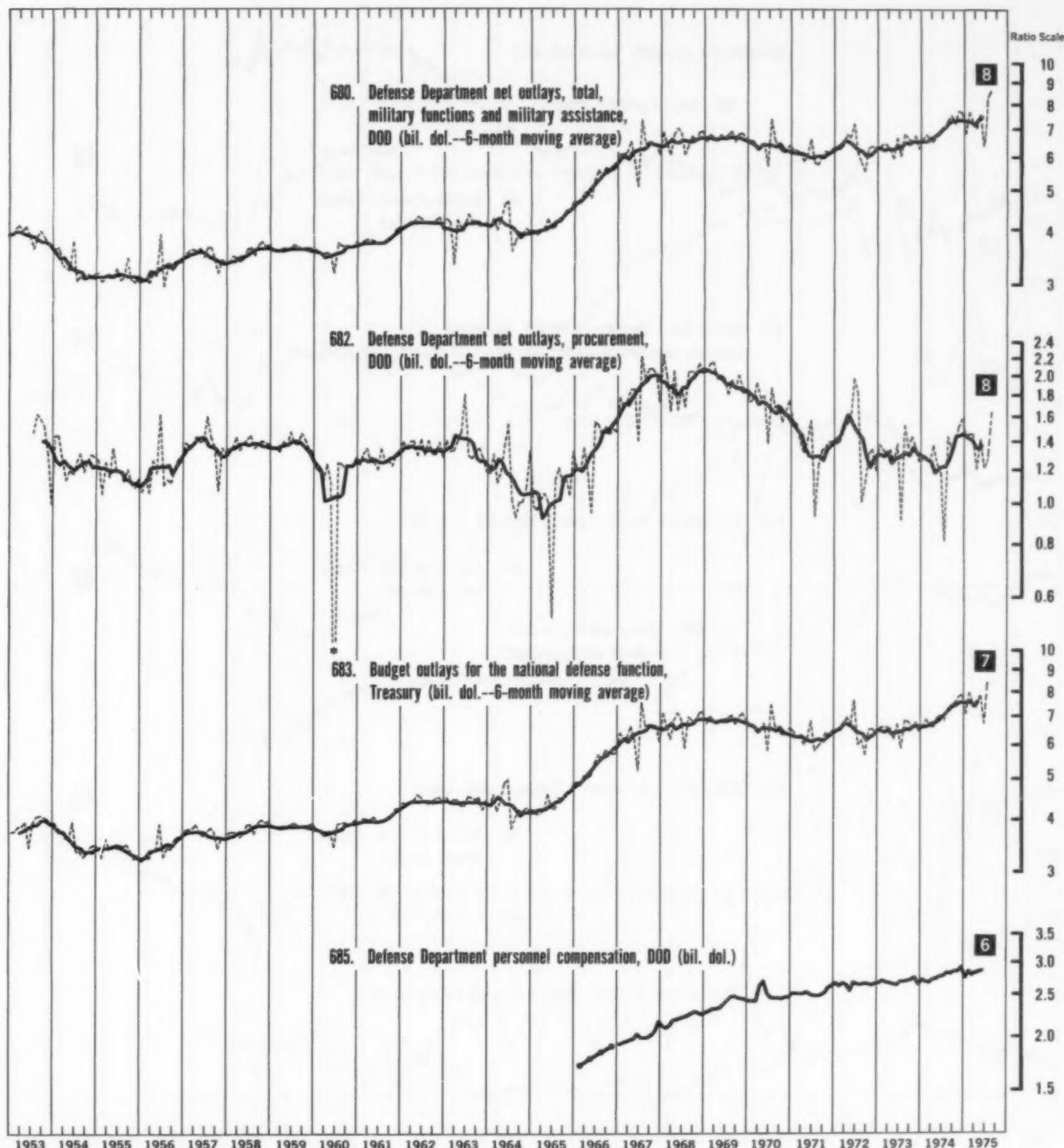
CHART
3

Intermediate and Final Indicators of Defense Activity--Continued



Current data for these series are shown on pages 22, 23, and 24.

Intermediate and Final Indicators of Defense Activity--Continued



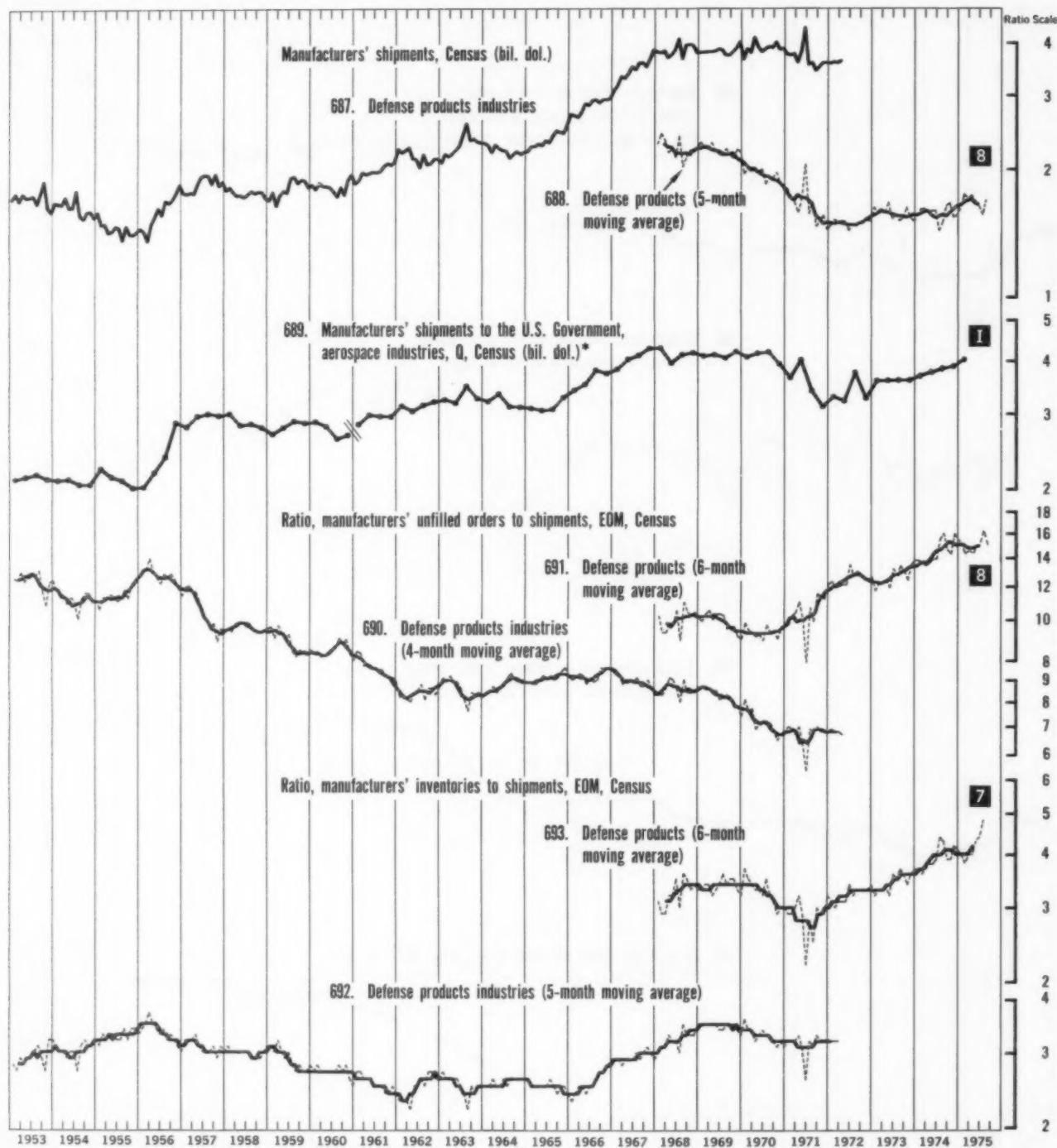
* Net expenditures for procurement, June 1960--\$245 million.

Current data for these series are shown on pages 24 and 25.

defense indicators

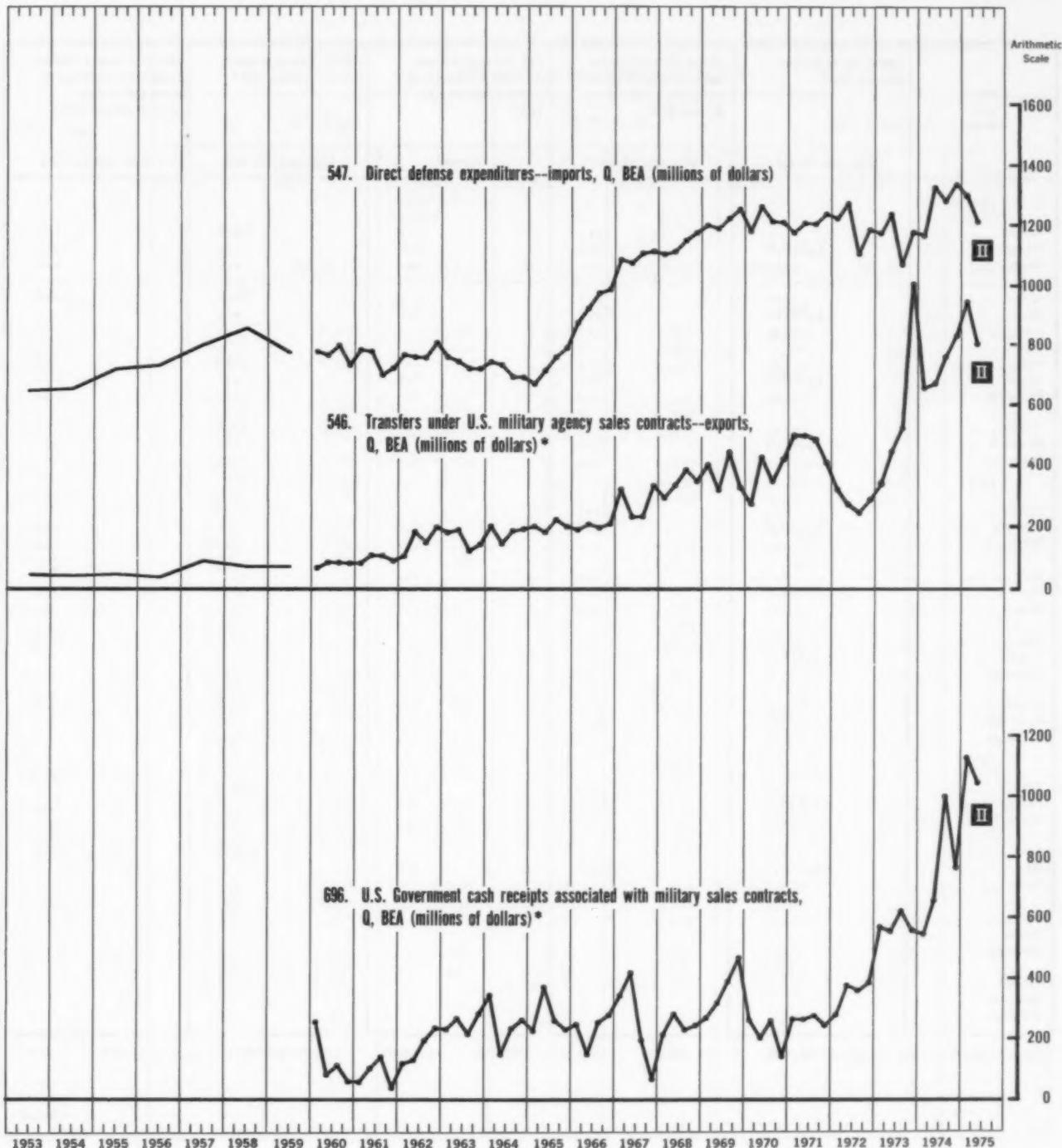
CHART
3

Intermediate and Final Indicators of Defense Activity--Continued



* Data prior to 1961 include shipments to non-Government customers.
Current data for these series are shown on page 26.

Defense-Related Balance of Payments Components



*See footnotes 1 and 2 on page 27.
Current data for these series are shown on page 27.

defense indicators

TABLE
1

Gross National Product and National Defense Purchases

Year and month	200(a). Gross national product, BEA*	264(a). Federal Government purchases of goods and services, national defense, BEA*	613. National defense purchases as a percent of gross national product, BEA*	200(b). Change in gross national product, BEA*	264(b). Change in Federal Government purchases of goods and services, national defense, BEA*
	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Percent)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)
1973					
January .....	...	...	...	44.2	0.3
February	1,248.9	75.0	6.0	...	...
March .....	...	...	...	...	...
April .....	...	...	...	29.0	-1.0
May	1,277.9	74.0	5.8	...	...
June .....	...	...	...	...	...
July .....	...	...	...	31.0	-0.7
August	1,308.9	73.3	5.6	...	...
September .....	...	...	...	...	...
October .....	...	...	...	35.1	2.0
November	1,344.0	75.3	5.6	...	...
December .....	...	...	...	...	...
1974					
January .....	...	...	...	14.8	0.5
February	1,358.8	75.8	5.6	...	...
March .....	...	...	...	...	...
April .....	...	...	...	25.0	0.8
May	1,383.8	76.6	5.5	...	...
June .....	...	...	...	...	...
July .....	...	...	...	32.5	1.8
August	1,416.3	78.4	5.5	...	...
September .....	...	...	...	...	...
October .....	...	...	...	14.6	5.6
November	1,430.9	84.0	5.9	...	...
December .....	...	...	...	...	...
1975					
January .....	...	...	...	-14.3	0.7
February	1,416.6	84.7	6.0	...	...
March .....	...	...	...	...	...
April .....	...	...	...	r24.3	0.1
May .....	...	...	...
June	r1,440.9	84.8	5.9		
July					
August					
September					
October					
November					
December					

Note: All data on this page are seasonally adjusted.

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See page 5.)

defense indicators

TABLE

2

Advance Indicators of Defense Activity

Year and month	Defense Department gross obligations incurred, DOD							
	617. Total			619. Operations		621. Procurement		
	Not seasonally adjusted	Seasonally adjusted*	Moving average of seasonally adjusted data— 6-month*	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted*	Moving average of seasonally adjusted data— 6-month*
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973								
January	7,414	6,827	7,051	4,688	4,494	1,815	1,631	1,595
February	6,691	7,283	7,026	4,097	4,656	1,785	1,838	1,569
March	6,716	7,362	7,053	4,174	4,427	1,435	1,704	1,588
April	6,342	6,865	7,101	4,522	4,445	1,028	1,349	1,648
May	5,997	7,275	7,181	4,195	4,393	1,171	1,730	1,623
June	9,327	6,992	7,123	5,122	4,471	2,871	1,633	1,596
July	8,180	7,312	7,028	5,334	4,679	1,019	1,483	1,495
August	7,505	6,932	7,162	4,634	4,552	1,393	1,676	1,568
September	6,289	6,790	7,169	4,201	4,429	1,168	1,099	1,575
October	8,074	7,671	7,145	5,024	4,716	2,105	1,788	1,494
November	6,917	7,315	7,181	4,346	4,652	1,714	1,771	1,593
December	6,041	6,850	7,259	4,133	4,643	1,321	1,149	1,599
1974								
January	8,113	7,527	7,374	4,991	4,714	2,337	2,077	1,689
February	6,826	7,398	7,390	4,187	4,758	1,677	1,708	1,731
March	6,613	7,485	7,368	4,377	4,699	1,381	1,642	1,658
April	7,375	7,762	7,588	4,982	4,804	1,546	2,040	1,702
May	6,104	7,187	7,664	4,434	4,662	894	1,330	1,675
June	10,110	8,166	7,810	6,170	5,466	2,465	1,412	1,672
July	9,285	7,983	7,926	5,901	5,110	1,332	1,919	1,706
August	8,874	8,279	7,912	5,224	5,203	1,416	1,692	1,607
September	7,790	8,179	8,083	4,771	5,040	1,919	1,842	1,777
October	7,965	7,681	8,075	5,394	4,999	1,709	1,446	1,780
November	7,600	8,211	7,968	4,471	4,786	2,281	2,349	1,697
December	7,260	8,116	7,832	4,826	5,334	1,646	1,431	1,667
1975								
January	8,252	7,341	7,916	5,471	5,148	1,895	1,424	1,751
February	6,904	7,467	7,958	4,604	5,220	1,569	1,509	1,748
March	7,526	8,677	7,956	4,787	5,251	1,994	2,349	1,665
April	7,403	7,933	8,033	5,424	5,209	1,147	1,425	rl,700
May	6,796	8,199	(NA)	4,761	5,121	1,147	1,850	(NA)
June	r11,027	r8,583		r6,275	r5,560	r2,693	r1,642	
July	(NA)	(NA)		(NA)	(NA)	(NA)	(NA)	
August								
September								
October								
November								
December								

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See page 6.)

defense indicators

TABLE
2

Advance Indicators of Defense Activity--Continued

Year and month	623. Gross obligations incurred outside the Federal Government for national defense, Treasury		Defense Department military prime contract awards for work performed in the United States, DOD							
			625. Total				626. Aircraft		627. Missile and space systems	
	Seasonally adjusted*	Moving average of seasonally adjusted data— 6-month*	Not seasonally adjusted	Seasonally adjusted*	Moving average of seasonally adjusted data— 6-month*	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted	
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973										
January	6,496	7,490	2,578	2,824	2,956	728	...	377	...	
February	8,706	7,501	2,418	2,899	2,893	328	1,942	297	1,306	
March	7,421	7,281	2,841	2,947	2,824	721	...	504	...	
April	6,986	p7,264	1,854	2,568	2,884	122	...	233	...	
May	7,098	p7,477	2,489	3,171	2,765	866	1,948	129	967	
June	p6,877	p7,266	5,122	2,897	2,828	1,243	...	349	...	
July	7,773	p7,294	2,357	2,106	2,873	396	...	207	...	
August	7,441	p7,619	3,224	3,276	2,975	611	1,804	921	1,200	
September	7,588	p7,672	3,309	3,222	3,032	867	...	435	...	
October	8,935	7,592	3,198	3,176	3,024	939	...	368	...	
November	7,417	7,674	2,967	3,515	3,236	686	2,150	283	1,138	
December	6,396	7,746	2,944	2,850	3,214	316	...	563	...	
1974										
January	8,264	7,784	3,084	3,378	3,123	1,093	...	206	...	
February	7,874	7,673	2,613	3,141	3,317	598	2,424	305	844	
March	7,819	7,712	2,602	2,677	3,212	517	...	255	...	
April	8,270	p8,068	3,127	4,343	3,310	459	...	303	...	
May	7,647	p8,112	2,250	2,881	3,329	308	1,104	297	1,271	
June	p8,534	p8,333	6,086	3,440	3,498	502	...	323	...	
July	8,526	p8,584	3,924	3,494	3,636	1,089	...	618	...	
August	9,202	p8,623	4,091	4,153	3,605	591	2,446	430	1,448	
September	9,326	p8,842	3,586	3,502	3,754	866	...	848	...	
October	8,503	8,776	4,165	4,161	3,603	1,156	...	410	...	
November	8,963	8,700	3,207	3,777	3,636	856	2,900	434	1,107	
December	8,139	8,545	2,616	2,532	3,609	569	...	361	...	
1975										
January	8,069	8,422	3,567	3,693	3,494	1,062	...	346	...	
February	8,271	8,333	3,321	3,987	3,488	509	2,147	276	980	
March	8,590	8,382	2,625	2,817	3,513	421	...	244	...	
April	7,967	(NA)	2,914	4,122	3,720	316	...	377	...	
May	9,253	(NA)	2,713	3,926	(NA)	386	1,240	242	1,654	
June			6,626	3,773		732		537		
July			(NA)	(NA)		(NA)		(NA)		
August										
September										
October										
November										
December										

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See pages 6 and 7.)

Advance Indicators of Defense Activity--Continued

Year and month	Defense Department military prime contract awards for work performed in the United States, DOD—Continued						
	628. Ships, not seasonally adjusted	629. Weapons and ammunition		630. Electronic and communications equipment		631. Combat vehicles	
		Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973							
January	84	207	...	214	...	14	...
February	378	226	658	215	939	11	60
March	85	195	...	420	...	11	...
April	82	150	...	237	...	12	...
May	78	184	725	351	959	15	65
June	139	566	...	654	...	54	...
July	337	21	...	131	...	50	...
August	220	81	436	354	990	24	80
September	203	114	...	313	...	27	...
October	161	105	...	248	...	116	...
November	465	106	310	392	900	21	214
December	588	192	...	261	...	56	...
1974							
January	52	135	...	311	...	102	...
February	212	244	541	415	1,013	5	253
March	103	142	...	206	...	40	...
April	190	170	...	403	...	129	...
May	155	123	680	270	1,110	98	502
June	1,175	554	...	732	...	404	...
July	230	37	...	321	...	59	...
August	625	72	453	402	1,316	104	249
September	134	111	...	352	...	151	...
October	210	122	...	598	...	25	...
November	328	114	334	349	1,239	22	126
December	109	165	...	254	...	81	...
1975							
January	325	125	...	414	...	21	...
February	251	160	515	331	1,379	66	288
March	11	217	...	535	...	52	...
April	621	147	...	313	...	23	...
May	94	128	683	587	1,255	86	191
June	858	672	...	696		161	
July	(NA)	(NA)		(NA)		(NA)	
August							
September							
October							
November							
December							

NA=not available; p=preliminary; r=revised; e=estimated.

defense indicators

TABLE

2

Advance Indicators of Defense Activity--Continued

Year and month	Defense Department military prime contract awards for work performed in the United States, DOD—Continued							
	632. Other hard goods		633. Soft goods		634. Construction		635. Services	
	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973								
January	140	...	141	...	103	...	154	...
February	141	458	112	519	205	484	140	755
March	130	...	102	...	131	...	152	...
April	145	...	113	...	153	...	195	...
May	128	480	97	488	151	442	137	776
June	393	...	158	...	493	...	446	...
July	65	...	489	...	34	...	341	...
August	117	432	177	553	111	377	265	653
September	106	...	186	...	101	...	252	...
October	133	...	154	...	147	...	388	...
November	142	365	235	600	54	450	161	663
December	108	...	228	...	86	...	178	...
1974								
January	128	...	297	...	90	...	204	...
February	111	467	145	1,374	52	258	138	900
March	179	...	487	...	92	...	181	...
April	294	...	344	...	248	...	166	...
May	139	564	214	1,081	58	504	168	846
June	352	...	256	...	604	...	524	...
July	163	...	338	...	131	...	451	...
August	158	677	819	890	148	601	303	762
September	129	...	219	...	112	...	233	...
October	108	...	267	...	138	...	446	...
November	127	391	226	692	126	578	185	742
December	135	...	222	...	104	...	181	...
1975								
January	154	...	217	...	168	...	307	...
February	143	497	704	1,489	134	481	341	1,396
March	152	...	191	...	127	...	201	...
April	147	...	164	...	156	...	190	...
May	165	487	121	658	291	838	211	925
June	399	...	213	...	1,073	...	574	...
July	(NA)	...	(NA)	...	(NA)	...	(NA)	...
August .....	.....	.....	.....	.....	.....	.....	.....	.....
September .....	.....	.....	.....	.....	.....	.....	.....	.....
October .....	.....	.....	.....	.....	.....	.....	.....	.....
November .....	.....	.....	.....	.....	.....	.....	.....	.....
December .....	.....	.....	.....	.....	.....	.....	.....	.....

NA=not available; p=preliminary; r=revised; e=estimated.

Advance Indicators of Defense Activity--Continued

Year and month	Defense Department military prime contract awards for work performed in the United States, DOD—Continued					640. Defense Department military prime contract awards for work outside the United States, DOD	
	636. Contracts under \$10,000		637. Educational and nonprofit institutions		638. Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), not seasonally adjusted		
	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted	
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973							
January	341	...	41	...	34	156	...
February	320	1,003	45	152	0	151	527
March	334	...	43	...	13	125	...
April	356	...	46	...	10	213	...
May	319	977	35	168	-1	83	645
June	551	...	76	...	0	264	...
July	225	...	61	...	0	368	...
August	210	997	123	259	10	244	497
September	390	...	86	...	229	159	...
October	319	...	85	...	35	194	...
November	335	1,059	87	169	0	240	833
December	326	...	29	...	13	186	...
1974							
January	327	...	76	...	63	160	...
February	333	996	55	224	0	114	594
March	329	...	58	...	13	198	...
April	384	...	37	...	0	80	...
May	382	1,066	38	156	0	94	559
June	570	...	70	...	20	333	...
July	225	...	162	...	100	421	...
August	321	1,116	118	316	0	448	632
September	380	...	51	...	0	120	...
October	399	...	46	...	240	190	...
November	374	1,204	59	159	7	93	559
December	343	...	92	...	0	111	...
1975							
January	372	...	51	...	5	114	...
February	345	1,144	61	206	0	93	388
March	419	...	53	...	2	96	...
April	418	...	42	...	0	73	...
May	367	1,141	35	167	0	86	813
June	635	...	76	...	0	558	...
July	(NA)	...	(NA)	...	(NA)	(NA)	
August							
September							
October							
November							
December							

NA=not available; p=preliminary; r=revised; e=estimated.

defense indicators

TABLE
2

Advance Indicators of Defense Activity--Continued

Year and month	Defense Department gross unpaid obligations outstanding, DOD						648. Manufacturers' new orders, defense products, Census	650. Manufactur- ers' new orders from the U.S. Govern- ment, aerospace industries, Census, seasonally adjusted*		
	643. Total		644. Operations		645. Procurement					
	Not seasonally adjusted	Seasonally adjusted*	Not seasonally adjusted	Seasonally adjusted	Not seasonally adjusted	Seasonally adjusted				
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)		
1973										
January	35,171	34,280	5,741	5,381	22,326	21,718	1,618	1,589		
February	35,287	34,426	5,589	5,523	22,721	21,953	1,633	1,680		
March	34,766	34,976	5,273	5,586	22,469	22,291	1,804	1,758		
April	34,297	35,140	5,424	5,807	22,044	22,244	1,900	1,783		
May	33,409	35,693	5,227	5,886	21,753	22,565	1,789	1,709		
June	34,621	35,877	5,301	6,044	22,806	22,558	1,956	1,754		
July	e35,500	e36,188	e6,200	e6,385	e22,100	e22,620	1,175	1,676		
August	37,069	36,666	6,754	6,420	22,432	22,960	1,898	1,664		
September	36,829	36,285	6,719	6,454	22,195	22,556	1,338	1,720		
October	38,039	36,682	7,519	6,660	22,679	22,656	1,827	1,635		
November	37,680	36,869	7,193	6,673	22,877	22,763	2,124	1,803		
December	37,244	36,839	7,064	6,994	22,932	22,615	1,450	1,831		
1974										
January	38,249	37,280	7,425	6,959	23,791	23,143	2,183	1,852		
February	37,963	37,001	7,055	6,964	24,032	23,175	2,064	1,802		
March	37,249	37,436	6,779	7,189	23,847	23,634	1,462	1,794		
April	37,264	38,141	7,044	7,550	23,778	23,970	1,527	1,844		
May	35,601	38,076	6,476	7,301	23,123	23,987	2,079	1,710		
June	37,545	38,947	7,373	8,417	23,994	23,756	1,752	1,904		
July	e39,626	e40,435	e8,149	e8,392	e24,316	e24,914	1,377	1,940		
August	40,594	40,152	8,426	8,010	23,791	24,351	3,229	1,919		
September	41,055	40,488	8,311	7,991	24,283	24,703	1,678	1,965		
October	41,201	39,731	8,607	7,610	24,361	24,337	1,401	1,951		
November	40,949	40,068	7,906	7,334	25,147	25,022	2,351	1,994		
December	40,407	40,047	7,654	7,556	25,199	25,024	1,668	1,813		
1975										
January	40,819	39,823	7,997	7,495	25,484	24,838	1,635	1,817		
February	40,008	39,147	7,520	7,460	25,452	24,568	2,147	1,857		
March	39,473	39,791	7,169	7,651	25,688	25,259	1,702	1,742		
April	38,589	39,457	7,276	7,807	24,932	24,957	1,639	1,782		
May	37,120	39,658	6,746	7,666	24,321	25,099	1,659	1,812		
June	r39,557	r41,334	r7,303	r8,346	r25,311	r25,438	1,909	pl,776		
July	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	pl,818			
August							pl,927			
September										
October										
November										
December										

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See pages 7 and 8.)

defense indicators

TABLE
2

Advance Indicators of Defense Activity--Continued

Year and month	653. Average weekly overtime hours, production workers, defense products industries, BLS		654. Accession rate, defense products industries, BLS			655. Layoff rate, defense products industries, BLS		
	Not seasonally adjusted (Hours)	Seasonally adjusted* (Hours)	Not seasonally adjusted (Per 100 employees)	Seasonally adjusted* (Per 100 employees)	Moving average of seasonally adjusted data—4-month*	Not seasonally adjusted (Per 100 employees)	Seasonally adjusted* (Per 100 employees)	Moving average of seasonally adjusted data—4-month* (Per 100 employees)
1973								
January	2.9	3.0	2.5	2.5	2.3	0.8	0.5	0.5
February	3.0	3.1	2.0	2.3	2.3	0.6	0.5	0.5
March	2.9	3.0	2.0	2.2	2.3	0.7	0.5	0.5
April	2.8	3.1	2.0	2.2	2.2	0.6	0.5	0.5
May	2.9	3.2	2.2	2.2	2.2	0.5	0.6	0.6
June	2.8	2.8	2.9	2.2	2.2	0.5	0.7	0.6
July	2.7	3.0	2.5	2.3	2.2	0.6	0.8	0.7
August	2.8	2.8	2.6	2.2	2.2	0.5	0.6	0.6
September	3.4	3.1	2.4	2.1	2.3	0.4	0.5	0.6
October	3.2	3.1	2.5	2.5	2.3	0.6	0.5	0.5
November	3.6	3.3	2.0	2.2	2.2	0.7	0.6	0.5
December	3.7	3.3	1.3	2.0	2.2	0.5	0.6	0.5
1974								
January	2.9	3.0	2.1	2.1	2.1	0.7	0.5	0.5
February	2.7	2.8	1.8	2.1	2.1	0.6	0.5	0.5
March	2.8	2.9	1.9	2.1	2.1	0.6	0.5	0.5
April	2.1	2.4	2.1	2.3	2.2	0.6	0.5	0.5
May	2.8	3.1	2.2	2.2	2.2	0.5	0.6	0.5
June	3.0	3.0	2.8	2.1	2.2	0.5	0.6	0.6
July	2.7	3.0	2.6	2.4	2.2	0.4	0.6	0.6
August	2.8	2.9	2.6	2.2	2.3	0.5	0.6	0.6
September	2.9	2.6	2.6	2.3	2.3	0.5	0.6	0.6
October	2.8	2.7	2.1	2.1	2.0	0.7	0.6	0.6
November	2.9	2.6	1.3	1.5	1.9	0.8	0.7	0.7
December	3.0	2.6	0.9	1.6	1.6	0.8	0.8	0.8
1975								
January	2.3	2.4	1.4	1.4	1.5	1.2	1.1	1.0
February	2.4	2.5	1.3	1.6	1.6	1.3	1.2	1.3
March	2.3	2.4	1.4	1.6	1.7	2.1	2.0	1.4
April	2.1	2.4	1.9	2.1	1.6	1.4	1.4	1.5
May	2.0	2.2	1.3	1.3	1.5	1.3	1.3	1.5
June	r2.5	r2.5	1.7	1.0	(NA)	1.3	1.4	(NA)
July	p2.2 (NA)	p2.5 (NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
August								
September								
October								
November								
December								

NA=not available; p=preliminary; r=revised; e=estimated. *Indicates series shown in charts. (See page 8.)

defense indicators

TABLE
3

Intermediate and Final Indicators of Defense Activity

Year and month	657. Output of defense and space equipment, FRB, seasonally adjusted*	659. Manufacturers' inventories, defense products, Census, seasonally adjusted*	661. Manufacturers' unfilled orders, defense products, Census, seasonally adjusted*	664. Manufacturers' unfilled orders from the U.S. Gov- ernment, aerospace industries, Census, seasonally adjusted*	666. Defense Department progress payments out- standing, DOD, not seasonally adjusted*	670. Employment in defense products industries, total, BLS	
	(Index: 1967=100)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Thous.)	(Thous.)
1973							
January	79.8	5,210	19,060	...	...	1,160	1,156
February	80.6	5,248	19,123	...	...	1,160	1,159
March	80.1	5,266	19,343	15,533	6,942	1,156	1,158
April	80.0	5,384	19,659	...	...	1,154	1,159
May	79.7	5,384	19,780	...	...	1,152	1,160
June	80.1	5,477	20,211	16,084	7,026	1,159	1,162
July	81.1	5,434	19,824	...	...	1,158	1,163
August	79.7	5,555	20,210	...	...	1,159	1,165
September	79.8	5,528	20,013	15,904	7,139	1,166	1,163
October	80.0	5,531	20,215	...	...	1,168	1,164
November	80.9	5,508	20,797	...	...	1,172	1,162
December	81.9	5,615	20,740	16,448	7,385	1,172	1,165
1974							
January	81.4	5,679	21,372	...	...	1,167	1,163
February	80.9	5,837	21,827	...	...	1,160	1,159
March	81.0	5,966	21,678	17,378	7,781	1,158	1,160
April	80.6	5,978	21,622	...	...	1,157	1,162
May	82.2	6,119	22,107	...	...	1,153	1,161
June	81.7	6,201	22,261	16,847	8,104	1,159	1,162
July	82.6	6,303	22,208	...	...	1,160	1,166
August	82.7	6,431	23,941	...	...	1,123	1,129
September	83.1	6,377	23,979	19,002	8,531	1,168	1,166
October	84.1	6,463	23,715	...	...	1,179	1,175
November	83.7	6,477	24,530	...	...	1,179	1,170
December	83.4	6,543	24,612	20,662	9,166	1,168	1,161
1975							
January	83.8	6,503	24,603	...	...	1,162	1,159
February	82.4	6,714	24,998	...	...	1,125	1,124
March	82.1	6,867	24,986	p20,809	9,609	1,122	1,124
April	82.4	6,978	24,883	...	...	1,106	1,111
May	r82.7	7,110	24,875	...	...	1,116	1,123
June	r82.9	7,637	25,118	(NA)	10,464	1,108	1,110
July	r82.6	7,455	r25,368	r25,599		r1,092	r1,098
August	p81.9	(NA)				p1,086	p1,092
September							
October							
November							
December							

NA=not available; p=preliminary; r=revised;

e=estimated.

*Indicates series shown in charts (See pages 9 and 10.)

Intermediate and Final Indicators of Defense Activity--Continued

Year and month	671. Employment in defense products industries, production workers, BLS		673. Index of aggregate weekly man-hours, defense products industries, BLS		675. Index of aggregate weekly payrolls, production workers, defense products industries, BLS	
	Not seasonally adjusted	Seasonally adjusted*	Not seasonally adjusted	Seasonally adjusted*	Not seasonally adjusted	Seasonally adjusted*
	(Thous.)	(Thous.)	(1967=100)	(1967=100)	(1967=100)	(1967=100)
1973						
January	615	611	68.7	68.6	88.7	88.5
February	616	614	69.1	69.1	89.9	89.7
March	614	615	68.8	68.8	89.9	89.8
April	612	615	68.4	69.0	88.9	90.2
May	610	615	68.5	69.0	89.7	91.0
June	614	617	68.9	69.0	90.3	91.4
July	614	620	68.4	69.2	89.7	92.4
August	612	618	68.6	69.2	91.2	92.9
September	618	617	69.5	69.3	94.5	93.8
October	620	618	69.4	69.1	94.8	94.2
November	621	614	70.0	69.0	96.4	94.0
December	625	618	70.4	69.2	99.2	95.1
1974						
January	620	616	69.0	68.9	95.4	95.2
February	615	613	68.7	68.7	95.1	94.8
March	612	613	68.7	68.7	95.6	95.4
April	610	613	67.7	68.3	92.6	93.9
May	606	611	68.4	68.8	96.0	97.4
June	607	610	68.3	68.4	95.3	96.5
July	604	610	67.7	68.6	93.4	96.3
August	568	574	65.3	65.9	88.1	89.8
September	612	611	68.7	68.5	98.2	97.6
October	623	621	69.3	69.1	101.2	100.6
November	624	617	69.6	69.0	103.6	101.1
December	615	608	69.5	68.3	104.7	100.3
1975						
January	610	606	68.2	68.2	101.2	101.1
February	581	578	66.1	66.1	96.8	96.4
March	577	578	65.9	66.0	97.1	96.9
April	562	564	65.2	65.7	95.7	97.0
May	573	578	65.6	66.0	98.3	99.7
June	r565	r568	r65.5	r65.7	r99.6	r100.8
July	r555	r561	p64.1 (NA)	p64.9 (NA)	p96.3 (NA)	p99.4 (NA)
August	p545	p550				
September						
October						
November						
December						

NA=not available; p=preliminary; r=revised; e=estimated. *Indicates series shown in charts. (See page 10.)

defense indicators

TABLE

3

Intermediate and Final Indicators of Defense Activity--Continued

Year and month	Defense Department manpower, DOD		Defense Department net outlays, DOD				
	677. Military, not seasonally adjusted*	678. Civilian, not seasonally adjusted*	680. Total, military functions and military assistance			681. Operations	
			Not seasonally adjusted	Seasonally adjusted*	Moving average of seasonally adjusted data—6-month*	Not seasonally adjusted	Seasonally adjusted
	(Thous.)	(Thous.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973							
January	2,334	1,073	6,388	6,256	6,295	4,119	4,107
February	2,314	1,057	6,054	6,377	6,288	3,988	4,162
March	2,291	1,051	6,736	6,366	6,220	4,217	4,167
April	2,274	1,051	6,222	6,194	6,281	4,087	3,970
May	2,256	1,051	6,213	5,896	6,235	4,033	3,946
June	2,253	1,031	7,854	6,597	6,291	4,537	3,935
July	2,251	1,019	5,005	5,978	6,330	3,669	4,018
August	2,237	1,022	6,649	6,716	6,371	4,279	4,228
September	2,232	1,019	5,967	6,598	6,503	4,027	4,316
October	2,227	1,022	6,527	6,444	6,441	4,105	4,156
November	2,218	1,026	6,766	6,683	6,534	4,359	4,378
December	2,202	1,026	5,953	6,228	6,535	4,066	4,226
1974							
January	2,199	1,034	6,728	6,538	6,524	4,376	4,333
February	2,195	1,039	6,384	6,717	6,527	4,137	4,313
March	2,187	1,042	6,702	6,536	6,537	4,398	4,364
April	2,174	1,046	6,685	6,458	6,648	4,367	4,221
May	2,156	1,053	7,204	6,745	6,712	4,718	4,536
June	2,162	1,070	7,872	6,894	6,801	4,835	4,296
July	2,162	1,074	5,979	6,921	6,956	4,628	4,917
August	2,153	1,064	6,897	7,254	7,068	4,804	4,957
September	2,157	1,049	6,948	7,463	7,218	4,575	4,828
October	2,156	1,046	7,271	7,130	7,328	4,817	4,853
November	2,154	1,046	7,473	7,648	7,302	4,912	5,042
December	2,140	1,043	7,451	7,549	7,358	4,742	4,843
1975							
January	2,145	1,038	7,051	6,766	7,312	4,775	4,605
February	2,146	1,036	7,258	7,590	7,284	4,727	4,907
March	2,137	1,034	7,244	7,190	7,258	4,736	4,778
April	2,127	1,034	7,190	6,958	r7,056	4,960	4,744
May	2,124	1,035	7,780	7,494	r7,308	4,909	4,963
June	2,128	1,042	r7,476	r6,336	p7,475	r4,954	r4,395
July	r2,128	1,052	r7,124	r8,278		r4,918	r5,154
August	p2,111	(NA)	p7,959	p8,592		p5,081	p5,242
October							
November							
December							

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See pages 10 and 11.)

defense indicators

TABLE

3

Intermediate and Final Indicators of Defense Activity--Continued

Year and month	Defense Department net outlays, DOD—Continued			683. Budget outlays for the national defense function, Treasury		685. Defense Department personnel compensation, DOD	
	682. Procurement			Seasonally adjusted*	Moving average of seasonally adjusted data—6-month*	Not seasonally adjusted	Seasonally adjusted*
	Not seasonally adjusted	Seasonally adjusted*	Moving average of seasonally adjusted data—6-month*				
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973							
January	1,355	1,367	1,301	6,534	6,492	2,811	2,686
February	1,243	1,329	1,306	6,563	6,496	2,666	2,720
March	1,439	1,291	1,291	6,561	6,440	2,728	2,693
April	1,287	1,330	1,322	6,500	6,498	2,675	2,686
May	1,315	1,243	1,245	6,164	6,384	2,736	2,666
June	1,649	1,371	1,276	6,666	6,419	2,615	2,655
July	863	907	1,285	5,849	6,451	2,712	2,707
August	1,450	1,513	1,300	6,776	6,458	2,735	2,705
September	1,239	1,344	1,318	6,754	6,554	2,615	2,720
October	1,487	1,425	1,298	6,542	6,512	2,732	2,732
November	1,268	1,349	1,357	6,735	6,632	2,765	2,771
December	1,124	1,250	1,318	6,416	6,642	2,589	2,663
1974							
January	1,270	1,262	1,300	6,569	6,613	2,879	2,738
February	1,195	1,276	1,289	6,835	6,617	2,651	2,702
March	1,313	1,241	1,268	6,579	6,640	2,700	2,687
April	1,382	1,355	1,254	6,567	6,733	2,750	2,739
May	1,292	1,227	1,179	6,874	6,768	2,817	2,745
June	1,346	1,165	1,204	6,973	6,831	2,710	2,782
July	801	810	1,221	6,783	6,962	2,835	2,793
August	1,348	1,425	1,224	7,212	7,112	2,814	2,837
September	1,251	1,343	1,270	7,362	7,254	2,741	2,823
October	1,455	1,377	1,338	7,467	7,393	2,869	2,864
November	1,372	1,501	1,440	7,727	7,436	2,827	2,864
December	1,439	1,569	1,444	7,809	7,550	2,874	2,924
1975							
January	1,427	1,428	1,460	7,039	7,554	2,913	2,762
February	1,351	1,444	1,429	7,896	7,526	2,808	2,862
March	1,500	1,440	1,414	7,385	7,536	2,812	2,799
April	1,220	1,194	1,354	7,297	7,350	2,867	2,836
May	1,467	1,406	r1,328	7,788	7,571	2,870	2,850
June	r1,409	r1,215	pl,360	6,692	(NA)	r2,823	r2,869
July	1,225	1,268	8,367			(NA)	(NA)
August	pl,559	pl,634	(NA)				
September							
October							
November							
December							

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See page 11.)

defense indicators

TABLE

3

Intermediate and Final Indicators of Defense Activity--Continued

Year and month	688. Manufacturers' shipments, defense products, Census		689. Manufacturers' shipments to the U.S. Government, aerospace industries, Census, seasonally adjusted*	691. Ratio, manufacturers' unfilled orders to shipments, defense products, Census		693. Ratio, manufacturers' inventories to shipments, defense products, Census									
	Seasonally adjusted*	Moving average of seasonally adjusted data—5-month*		(Ratio)	(Ratio)	(Ratio)	(Ratio)								
(Mil. dol.)															
1973															
January	1,628	1,561	...	11.7	12.3	3.2	3.3								
February	1,570	1,575	3,599	12.2	12.3	3.3	3.3								
March	1,584	1,607	...	12.2	12.2	3.3	3.3								
April	1,584	1,587	...	12.4	12.3	3.4	3.3								
May	1,669	1,585	3,607	11.9	12.4	3.2	3.4								
June	1,527	1,571	...	13.2	12.6	3.6	3.4								
July	1,562	1,561	...	12.7	12.8	3.5	3.5								
August	1,511	1,552	3,612	13.4	12.8	3.7	3.5								
September	1,535	1,555	...	13.0	13.0	3.6	3.6								
October	1,625	1,543	...	12.4	13.1	3.4	3.6								
November	1,541	1,552	3,611	13.5	13.3	3.6	3.6								
December	1,505	1,567	...	13.8	13.4	3.7	3.6								
1974															
January	1,552	1,564	...	13.8	13.4	3.7	3.6								
February	1,610	1,573	3,696	13.6	13.6	3.6	3.7								
March	1,612	1,591	...	13.4	13.7	3.7	3.7								
April	1,586	1,600	...	13.6	13.7	3.8	3.8								
May	1,594	1,564	3,780	13.9	14.0	3.8	3.9								
June	1,596	1,541	...	13.9	14.4	3.9	4.0								
July	1,431	1,551	...	15.5	14.6	4.4	4.0								
August	1,497	1,565	3,834	16.0	14.7	4.3	4.0								
September	1,638	1,553	...	14.6	15.0	3.9	4.1								
October	1,663	1,584	...	14.3	15.3	3.9	4.1								
November	1,536	1,613	3,888	16.0	15.2	4.2	4.1								
December	1,585	1,636	...	15.5	15.0	4.1	4.0								
1975															
January	1,644	1,646	...	15.0	15.0	4.0	4.0								
February	1,753	1,688	p4,049	14.3	15.0	3.8	4.0								
March	1,714	1,704	...	14.6	14.8	4.0	4.0								
April	1,742	1,709	...	14.3	14.7	4.0	4.1								
May	1,668	r1,671	(NA)	14.9	r14.9	4.3	4.2								
June	1,666	pl,668		15.1	pl5.0	4.4	(NA)								
July	r1,567			r16.2		4.8									
August	pl,699			pl5.1		(NA)									
September															
October															
November															
December															

NA=not available; p=preliminary; r=revised; e=estimated.

*Indicates series shown in charts. (See page 12.)

Defense-Related Balance of Payments Components

Year and month	546. Transfers under U.S. military agency sales contracts (exports), BEA ¹		547. Direct defense expenditures (imports), BEA, not seasonally adjusted*	696. U.S. Government cash receipts associated with military sales contracts, BEA ²	
	Not seasonally adjusted	Seasonally adjusted*		Not seasonally adjusted	Seasonally adjusted*
	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)
1973					
January .....	...	...	...	...	...
February	332	347	1,174	520	566
March .....	...	...	...	...	...
April .....	...	...	...	...	...
May	504	455	1,236	544	552
June .....	...	...	...	...	...
July .....	...	...	...	...	...
August	489	531	1,072	610	617
September .....	...	...	...	...	...
October .....	...	...	...	...	...
November	1,017	1,009	1,177	616	555
December .....	...	...	...	...	...
1974					
January .....	...	...	...	...	...
February	639	663	1,166	499	544
March .....	...	...	...	...	...
April .....	...	...	...	...	...
May	738	678	1,324	645	653
June .....	...	...	...	...	...
July .....	...	...	...	...	...
August	716	766	1,279	996	998
September .....	...	...	...	...	...
October .....	...	...	...	...	...
November	852	837	1,335	817	762
December .....	...	...	...	...	...
1975					
January .....	...	...	...	...	...
February	r909	r954	r1,303	r1,082	r1,126
March .....	...	...	...	...	...
April .....	...	...	...	...	...
May	p888	p804	p1,216	p1,034	p1,042
June					
July					
August					
September					
October					
November					
December					

NA=not available; p=preliminary; r=revised; e=estimated. *Indicates series shown in charts. (See page 13.)

¹ Includes deliveries for which, under Public Law 93-199, Israel has been released from its contractual liability to pay.² Excludes funds made available under Public Law 93-199 to release Israel from its contractual liability to pay for defense articles and services purchased through military sales contracts. Quarterly expenditures for such purpose under Public Law 93-199 amounted to (in millions): 1974, IIQ, \$623; IIIQ, \$223; IVQ, \$91; 1975, IQ, \$187; IIQ, \$124.

Appendix A. SEASONAL ADJUSTMENT FACTORS

Series title	1975											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
MONTHLY SERIES												
Defense Department gross obligations incurred:												
617. Total ¹	112.4	92.5	86.7	93.3	82.9	128.5	115.0	104.3	97.4	107.8	86.5	89.5
619. Operations ¹	106.3	88.2	91.2	104.1	93.0	112.9	118.1	100.2	95.6	108.3	90.5	90.5
621. Procurement	133.1	104.0	84.9	80.5	62.0	164.0	72.8	88.9	98.1	112.3	107.0	91.4
623. Gross obligations incurred outside the Federal Government for national defense ¹	106.4	87.7	92.5	94.6	87.7	114.0	117.4	104.5	96.5	103.1	96.6	97.5
625. Defense Department military prime contract awards for work performed in the United States	96.6	83.3	93.2	70.7	69.1	175.6	113.9	104.4	103.2	107.2	90.8	90.6
Defense Department gross unpaid obligations outstanding: ²												
643. Total	102.5	102.2	99.2	97.8	93.6	95.7	98.4	101.4	101.9	103.7	102.5	100.9
644. Operations	106.7	100.8	93.7	93.2	88.0	87.5	97.7	104.8	104.7	113.3	108.1	101.3
645. Procurement	102.6	103.6	101.7	99.9	96.9	99.5	99.2	97.7	98.2	99.4	100.4	100.7
648. Manufacturers' new orders, defense products ³	94.9	98.1	98.4	87.5	71.2	93.1	178.1	85.4	116.2	104.9	91.8	106.5
653. Average weekly overtime hours, production workers, defense products industries ⁴	-.1	-.1	-.1	-.3	-.2	.0	-.3	-.1	.3	.1	.3	.4
654. Acquisition rate, defense products industries ⁴	.0	-.3	-.2	-.2	.0	.7	.2	.4	.3	.0	-.2	-.7
655. Layoff rate, defense products industries ⁴	-.1	-.1	-.1	-.0	-.0	-.1	-.2	-.1	-.1	-.0	-.1	-.0
657. Output of defense and space equipment ³	100.0	99.9	100.4	99.4	99.9	100.7	98.6	98.9	100.1	100.1	100.9	101.8
659. Manufacturers' inventories, defense products ³	98.6	99.8	101.3	100.6	100.0	99.9	100.2	99.2	99.7	100.6	100.6	99.4
661. Manufacturers' unfilled orders, defense products ³	101.0	101.2	101.0	99.8	97.3	96.3	101.0	99.7	100.5	101.0	99.9	99.8
Employment in defense products industries:												
670. Total	100.3	100.1	99.8	99.6	99.4	99.8	99.5	99.4	100.1	100.3	100.8	100.6
671. Production workers	100.6	100.4	99.9	99.6	99.1	99.5	99.0	99.0	100.1	100.3	101.2	101.2
673. Index of aggregate weekly man-hours, defense products industries	100.0	100.0	99.9	99.2	99.4	99.8	98.7	99.0	100.3	100.3	101.4	101.7
675. Index of aggregate weekly payrolls, production workers, defense products industries	100.1	100.4	100.2	98.6	98.6	98.8	96.9	98.1	100.6	100.5	102.5	104.4
Defense Department net outlays:												
680. Total, military functions and military assistance ¹	104.2	95.6	100.8	103.3	103.8	118.0	86.1	92.6	96.4	102.3	95.1	100.3
681. Operations ¹	103.7	96.3	99.1	104.5	98.9	112.7	95.4	96.9	94.6	100.9	97.4	100.2
682. Procurement ¹	99.9	93.6	104.1	102.2	104.3	116.0	96.6	95.4	97.9	105.3	88.6	92.4
683. Budget outlays for the national defense function ¹	103.8	95.3	100.7	103.5	102.7	118.1	87.3	91.5	97.0	102.8	95.4	97.1
685. Defense Department personnel compensation ¹	105.5	98.1	100.5	101.1	100.7	98.4	101.6	98.3	97.9	100.3	97.9	98.3
688. Manufacturers' shipments, defense products ³	88.0	96.4	99.5	99.6	98.9	105.6	98.1	99.1	103.4	99.5	102.9	108.3
QUARTERLY SERIES												
	IQ			IIQ			IIIQ			IVQ		
200. Gross national product ³	96.1			100.9			98.4			104.5		
284. Fed. Govt. purchases of goods and services, national defense ³	99.2			104.9			95.0			100.9		
546. Transfers under U.S. military agency sales contracts-exports ⁵	-24			60			-50			15		
Defense Department military prime contract awards:												
626. Aircraft	92.8			115.6			102.5			89.0		
627. Missile and space systems	88.4			69.9			133.0			108.9		
629. Weapons and ammunition	97.5			138.7			43.3			120.1		
630. Electronic and communications equipment	92.8			127.2			83.0			96.9		
631. Combat vehicles	48.2			141.1			110.4			101.4		
632. Other hard goods	90.3			146.0			69.3			94.6		
633. Soft goods	74.7			75.7			146.6			103.3		
634. Construction	89.1			181.4			66.0			63.7		
635. Services	60.8			105.4			123.9			109.5		
636. Under \$10,000	99.3			124.5			83.5			92.7		
637. Educational and nonprofit institutions	80.0			91.5			105.9			124.0		
640. Outside U.S.	78.1			88.2			163.3			70.5		
Aerospace industries:												
650. Manufacturers' new orders from the U.S. Government	91.3			89.6			121.0			97.3		
664. Manufacturers' unfilled orders from the U.S. Government	100.7			95.9			102.1			101.1		
689. Manufacturers' shipments to the U.S. Government	94.2			102.3			99.1			104.5		
696. U.S. Govt. cash receipts associated with military sales contracts ⁵	-45			-8			-2			55		

NOTE: The seasonal adjustment factors presented in this table were computed using the techniques described in the Bureau of the Census Technical Paper No. 15, *The X-11 Variant of the Census Method II Seasonal Adjustment Program*.

Monthly data for Defense Department military prime contract awards by commodity category (series 626 to 640) have not been adjusted for seasonal variation. The series on direct defense expenditures-imports (series 547), Defense Department progress payments outstanding (series 666), and Defense Department manpower (series 677 and 678) contain no measurable seasonal variation.

¹ Factors are products of seasonal and trading-day factors.

² Prior to 1972, data for gross unpaid obligations outstanding are not available for a number of months but these gaps were filled with averages of preceding and following months for purposes of estimating seasonal variation.

³ These series have been adjusted by the source agencies. The factors shown here are implicit seasonal factors for the calendar year 1973 and are derived by dividing the seasonally unadjusted data by the seasonally adjusted data.

⁴ These series have been seasonally adjusted using the additive version of the seasonal adjustment program. Seasonally adjusted data are derived by subtracting the adjustment factor from the unadjusted data. Seasonally adjusted data for other series are derived by dividing the seasonal factors into the unadjusted data.

⁵ This series is the total of component series which have been adjusted separately by the source agency. The factors shown here are implicit seasonal factors for the calendar year 1974 and are derived by subtracting the seasonally adjusted data from the seasonally unadjusted data.

Appendix B. AVERAGE CHANGES AND RELATED MEASURES OF VARIABILITY

Part 1. Monthly Series

Series title	Period covered	\bar{O}	\bar{C}_I	\bar{T}	\bar{C}	\bar{T}/\bar{C}	MCD	Average duration of run (ADR)	
								CI	MCD
Defense Department gross obligations incurred:									
617. Total	Jan. '57-Jan. '74	18.68	7.38	7.29	0.75	9.72	6	1.53	2.31
619. Operations	July '59-Jan. '74	8.33	2.61	2.50	.64	3.88	4	1.72	3.00
621. Procurement	Jan. '57-Jan. '74	45.13	22.23	22.10	1.68	13.19	6	1.49	2.12
623. Gross obligations incurred outside the Federal Government for national defense	July '63-Jan. '74	(NA)	6.94	6.82	.74	9.21	6	1.52	2.47
625. Defense Department military prime contract awards for work performed in the United States, total	Jan. '57-Jan. '74	33.17	15.07	14.94	1.32	11.33	6	1.39	2.03
Defense Department gross unpaid obligations outstanding:									
643. Total	Jan. '57-Jan. '74	2.08	1.36	.90	.91	.99	1	2.58	2.58
644. Operations	Jan. '67-Jan. '74	5.47	2.48	2.16	1.06	2.03	3	2.00	4.82
645. Procurement	Jan. '67-Jan. '74	2.49	1.51	.99	.99	1.00	2	2.15	4.88
Manufacturers' new orders:									
647. Defense products industries	Jan. '57-Mar. '72	(NA)	15.11	14.89	.97	15.32	6	1.58	2.33
648. Defense products	Feb. '68-Jan. '74	25.69	19.12	19.01	1.59	11.94	6	1.45	2.00
*653. Average weekly overtime hours, production workers, defense products industries (hours)	Jan. '58-Jan. '74	.22	.13	.13	.05	2.84	3	2.13	4.22
*654. Accession rate, defense products industries (per 100 employees)	Jan. '58-Jan. '74	.39	.16	.15	.05	3.12	4	2.26	3.78
*655. Layoff rate, defense products industries (per 100 employees)	Jan. '58-Jan. '74	.17	.13	.13	.04	3.07	4	2.02	4.02
657. Output of defense and space equipment	Jan. '54-Jan. '74	(NA)	.98	.48	.79	.60	1	4.07	4.07
Manufacturers' inventories:									
658. Defense products industries	Jan. '57-Mar. '72	(NA)	1.04	.52	.85	.62	1	2.80	2.80
659. Defense products	Jan. '68-Jan. '74	1.89	1.74	1.16	1.27	.92	1	3.00	3.00
Manufacturers' unfilled orders:									
660. Defense products industries	Jan. '57-Mar. '72	(NA)	1.23	.90	.83	1.09	2	2.76	3.42
661. Defense products	Jan. '68-Jan. '74	1.93	1.64	1.11	.99	1.11	2	2.77	3.94
Employment in defense products industries:									
670. Total	Jan. '58-Jan. '74	.74	.68	.25	.60	.42	1	4.68	4.68
671. Production workers	Jan. '58-Jan. '74	1.02	.86	.43	.69	.63	1	3.62	3.62
673. Index of aggregate weekly man-hours, defense products industries	Jan. '58-Jan. '74	.92	.75	.35	.62	.56	1	4.09	4.09
675. Index of aggregate weekly payrolls, production workers, defense products industries	Jan. '58-Jan. '74	1.61	1.07	.65	.81	.80	1	3.05	3.05
Defense Department manpower:									
677. Military ^⑩	Jan. '57-Jan. '74	.66	(NA)	.26	.59	.44	1	4.25	4.25
678. Civilian ^⑩	Jan. '57-Jan. '74	.55	(NA)	.33	.43	.79	1	4.25	4.25
Defense Department net outlays:									
680. Total, military functions and military assistance	Jan. '57-Jan. '74	9.06	3.97	3.87	.75	5.18	6	1.71	3.16
681. Operations	July '59-Jan. '74	7.57	3.52	3.31	.70	4.75	5	1.61	2.43
682. Procurement	Jan. '57-Jan. '74	15.02	11.57	11.44	1.55	7.38	6	1.59	2.88
683. Budget outlays for the national defense function	Jan. '57-Jan. '74	(NA)	4.09	4.02	.69	5.82	6	1.58	3.02
685. Defense Department personnel compensation	Jan. '67-Jan. '74	2.72	1.40	1.21	.53	2.29	4	2.55	4.26
Manufacturers' shipments:									
687. Defense products industries	Jan. '57-Mar. '72	(NA)	2.67	2.49	.87	2.85	3	1.64	3.40
688. Defense products	Jan. '68-Jan. '74	6.98	4.45	4.40	.95	4.62	5	1.41	2.83
Ratio, manufacturers' unfilled orders to shipments:									
690. Defense products industries	Jan. '57-Mar. '72	(NA)	2.95	2.71	.96	2.82	4	1.90	3.81
691. Defense products	Jan. '68-Jan. '74	8.23	5.09	5.05	.93	5.46	6	1.60	3.05
Ratio, manufacturers' inventories to shipments:									
692. Defense products industries	Jan. '57-Mar. '72	(NA)	2.84	2.90	.72	4.01	5	2.46	5.74
693. Defense products	Jan. '68-Jan. '74	8.05	5.37	5.44	.75	7.20	6	1.76	3.35

NA = not available.

*Measures for these series are based on actual changes rather than percent changes (see definition below). ^⑩ indicates measures are based on unadjusted data.

BRIEF DEFINITIONS OF MEASURES SHOWN IN PART 1

The measures in this appendix provide a historical perspective for interpreting current changes in each series. They are derived using the Census X-11 seasonal adjustment program. Brief definitions of the measures are given below; more complete definitions appear in *Electronic Computers and Business Indicators* by Julius Shiskin, issued as Occasional Paper 57 by the National Bureau of Economic Research, 1957 (reprinted from *Journal of Business*, October 1957).

" \bar{O} " is the average month-to-month percent change, without regard to sign, in the original unadjusted series. (See final paragraph below for exceptions to these definitions.)

" \bar{C}_I " is the same for the seasonally adjusted series.

" \bar{C} " is the same for the short-term trend, which is a smooth, flexible moving average of the seasonally adjusted series.

" \bar{T} " is the same for the irregular component, which is obtained by dividing the seasonally adjusted series by the short-term trend.

" \bar{T}/\bar{C} " measures the relative smoothness (small values) or irregularity (large values) of the seasonally adjusted series. It is the ratio of the average monthly percent change (without regard to sign) in the irregular component to the average monthly percent change (without regard to sign) in the short-term trend.

"MCD" (months for cyclical dominance) estimates the number of months required for the short-term trend to dominate the irregular component. Average percent changes are computed for spans of from 1 to 12 months for both the irregular component and the short-term trend. MCD is the shortest span of months for which the average percent change (without regard to sign) in the short-term trend is greater than that in the irregular component. All MCD's greater than "5" are shown as "6".

Appendix B. AVERAGE CHANGES AND RELATED MEASURES OF VARIABILITY—Continued

"Average Duration of Run" (ADR) is another measure of smoothness and is equal to the average number of consecutive monthly changes in the same direction in any series of observations. When there is no change between two observations, a change in the same direction as the preceding change is assumed. The ADR is shown for the seasonally adjusted series (CI) and the MCD curve, which is a moving average (with the number of terms equal to MCD) of the seasonally adjusted series. A comparison of these measures with the expected ADR of a random series indicates whether the changes approximate those of a random series. In a random series, the expected ADR is 1.5 and the actual values fall between 1.36 and 1.75 about 95 percent of the time. For a moving average of a random series, the expected ADR is 2.

Measures for series identified with an asterisk (*) are computed by an additive method. This method is used for series with zero or negative data, series which could approach zero, and series expressed in percent. In this method, the measures are defined the same as above except for two differences: (1) the measures are based on actual month-to-month changes (rather than percent changes) and (2) the irregular component is obtained by subtracting the short-term trend from the seasonally adjusted series. The average changes shown above for the components of such a series are in the same unit of measure as the series itself. The unit is indicated in the series title.

Part 2. Quarterly Series

Series title	Period covered	\bar{O}	\bar{CI}	\bar{I}	\bar{C}	\bar{T}/\bar{C}	QCD	Average duration of run (ADR)	
								CI	QCD
200. Gross national product	IQ '57-IVQ '73 . . .	5.70	1.79	0.32	1.73	0.18	1	9.57	9.57
264. Federal Government purchases of goods and services, national defense	IQ '57-IVQ '73 . . .	6.18	2.00	.76	1.71	.45	1	3.05	3.05
*546. Transfers under U.S. military agency sales contracts—exports (mil. dol.)	IQ '60-IVQ '73 . . .	76.33	54.22	39.30	29.71	1.32	2	1.67	2.35
*547. Direct defense expenditures—imports (mil. dol.) (1)	IQ '60-IVQ '73 . . .	34.27	(NA)	26.55	21.70	1.22	2	1.83	2.70
*613. National defense purchases as a percent of GNP (percent)	IQ '57-IVQ '73 . . .	.33	.18	.08	.16	.48	1	5.58	5.58
650. Manufacturers' new orders from the U.S. Government, aerospace industries	IQ '61-IVQ '73 . . .	(NA)	16.77	14.80	5.06	2.92	4	1.38	1.66
664. Manufacturers' unfilled orders from the U.S. Government, aerospace industries	IQ '61-IVQ '73 . . .	(NA)	3.75	2.31	2.51	.92	1	2.32	2.32
666. Defense Department progress payments outstanding (1)	IQ '57-IVQ '73 . . .	4.73	(NA)	2.25	4.22	.53	1	2.48	2.48
689. Manufacturers' shipments to the U.S. Government, aerospace industries	IQ '61-IVQ '73 . . .	(NA)	4.16	3.27	1.99	1.64	2	1.70	2.27
*696. U.S. Government cash receipts associated with military sales contracts (million dollars)	IQ '60-IVQ '73 . . .	96.62	73.64	56.86	38.62	1.47	2	1.57	2.35

NA = not available.

*Measures for these series are based on actual changes rather than percent changes (see definition below). (1) indicates measures are based on unadjusted data.

BRIEF DEFINITIONS OF MEASURES SHOWN IN PART 2

These measures are defined the same as those in part 1 except that they are based on quarter-to-quarter percent changes. For example, \bar{CI} is the average quarter-to-quarter percent change (without regard to sign) in the seasonally adjusted series.

In deriving "QCD" (quarters for cyclical dominance), average percent changes are computed for spans of from one to four quarters for the irregular component and the short-term trend. QCD is the shortest span of quarters for

which the average percent change (without regard to sign) in the short-term trend is greater than that in the irregular component. All QCD's greater than "3" are shown as "4". The "Average Duration of Run" (ADR) measures are also expressed in quarters.

As in part 1, measures for series identified with an asterisk (*) are computed by an additive method. This method is the same as that used for the monthly series except for the use of quarterly data rather than monthly.

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		Charts	Tables					Charts	Tables		
Accession rate, defense products industries	654	8	21	4/75	4/73	Inventories, manufacturers'	659	9	22	8/75	2/73
Aerospace industries						Defense products	658	9	...	1/72	2/73
Manufacturers' new orders from U.S. Government	650					Defense products industries	693	12	26	8/75	2/73
Manufacturers' shipments to U.S. Government	689					Ratio to shipments, defense products	692	12	...	11/72	2/73
Manufacturers' unfilled orders from U.S. Government	664					Ratio to shipments, defense products industries					
Balance of payments (defense-related)						Layoff rate, defense products industries	655	8	21	4/75	4/73
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Transfers under military agency sales contracts	546	13	27	8/75	10/73	Military manpower, Defense Department	677	10	24	8/75	8/68
Budget outlays for national defense function	683					Military prime contract awards—See Contract awards.					
Cash receipts associated with military sales contracts	696					Net outlays, Defense Department—See Outlays.					
Civilian manpower, Defense Department	678	10	24	8/75	8/68	New orders, manufacturers'					
Compensation						Defense products	648	7	20	8/75	2/73
Payrolls, aggregate weekly, defense products industries	675	10	23	5/75	4/73	Defense products industries	647	7	...	11/72	2/73
Personnel compensation, Defense Department	685	11	25	5/75	8/68	From Government, aerospace industries	650	8	20	5/75	2/73
Contract awards, military prime						Obligations incurred, gross					
Aircraft	626	...	16	7/75	8/68	Defense Department, operations	619	...	15	4/75	8/68
Civilian Health and Medical Program	638	...	19	7/75	...	Defense Department, procurement	621	6	15	4/75	8/68
Combat vehicles	631	...	17	7/75	8/68	Defense Department, total	617	6	15	4/75	8/68
Construction	634	...	18	7/75	8/68	Outside Government for national defense	623	6	16	4/75	10/73
Contracts under \$10,000	636	...	19	7/75	8/68	Obligations outstanding, gross unpaid	644	...	20	4/75	8/68
Educational and nonprofit institutions	631	...	19	7/75	8/68	Defense Department, operations	645	...	20	4/75	8/68
Electronics and communications equipment	630	...	17	7/75	8/68	Defense Department, procurement	643	7	20	4/75	8/68
Missile and space systems	627	...	16	7/75	8/68	Defense Department, total					
Other hard goods	632	...	18	7/75	8/68	Operations, Defense Department					
Services	635	...	18	7/75	8/68	Net outlays	681				
Ships	628	...	17	7/75	8/68	Obligations incurred	619				
Soft goods	633	...	18	7/75	8/68	Unpaid obligations outstanding	644				
Total	625	7	16	7/75	8/68	Orders—See New orders and Unfilled orders.					
Weapons and ammunition	629	...	17	7/75	8/68	Outlays					
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Defense Department						Defense Department, procurement	682	11	25	5/75	8/68
Gross obligations incurred—See Obligations incurred.						Defense Department, total	680	11	24	5/75	8/68
Gross unpaid obligations outstanding—See						Output of defense and space equipment	657	9	22	8/75	10/73
Obligations outstanding						Overtime hours, defense products industries	653	8	21	4/75	4/73
Civilian manpower and Military manpower											
Military prime contract awards—See Contract awards.						Payrolls, aggregate weekly, defense products industries	675				
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Personnel compensation						Procurement, Defense Department					
Progress payments outstanding						Net outlays	682				
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Employment, production workers, defense products industries						Purchases of goods and services for national defense	264				
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Layoff rate, defense products industries	670	10	22	5/75	4/73	Shipments, manufacturers'	688	12	26	8/75	2/73
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Expenditures—See Outlays.						Ratio, inventories to shipments, defense products industries	692				
Federal purchases of goods and services for national defense						Ratio, unfilled orders to shipments, defense products industries	691				
Gross national product						To Government, aerospace industries	690				
Federal purchases of goods and services for national defense	264	5	14	9/74	10/73	Transfers under military agency sales contracts	546				
Gross national product	280	5	14	9/74	10/73	Unfilled orders, manufacturers'					
National defense purchases as percent of GNP	613	5	14	8/75	10/73	Defense products	661	9	22	8/75	2/73
Gross obligations incurred—See Obligations incurred.						Defense products industries	660	9	...	7/71	2/73
Gross unpaid obligations outstanding—See Obligations outstanding.						From Government, aerospace industries	664	9	22	5/75	2/73



